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PAPERS AND PROCEEDINGS
OF THE
Sixty-first Annual Meeting
OF THE
AMERICAN ECONOMIC ASSOCIATION
Cleveland, Ohio, December 27-30, 1948

*Edited by James Washington Bell, Secretary of the Association
and
Gertrude Tait, Executive Assistant*

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PROGRAM OF THE SIXTY-FIRST ANNUAL MEETING OF THE
AMERICAN ECONOMIC ASSOCIATION

Cleveland, Ohio, December 27-30, 1948

This year's program attempted to make the annual meeting as representative as possible of the vast variety of interests of the Association's membership. The very wealth of the American economic profession made this a difficult task, and regrets are herewith expressed at the impossibility of including all the topics that, considered by themselves, would have been well worth presenting. Full use was, however, made of the opportunity to hold numerous joint sessions with allied associations meeting in Cleveland at the same time. Publication outlets of papers presented at joint sessions and not printed in this volume are indicated in footnote references in the program below.

The President wishes to acknowledge the generous assistance he has received from the members of the Program Committee, Professors J. W. Bell, A. F. Burns, R. A. Gordon, E. M. Hoover, P. A. Samuelson, Arthur Smithies, and D. H. Wallace, as well as from several other colleagues, some of whom have not only carried the whole burden of organizing individual sessions but have, in addition, supplied valuable help and advice.

It should hardly be necessary to reiterate that the purpose of the American Economic Association is to encourage freedom of discussion and that the Association as such does not assume any responsibility for the opinions or views expressed by those who participate in its meetings. We trust, also, that readers may take it for granted that no one but the author is responsible for the contents of his paper. Hence the disclaimer, which often appears as a footnote, to the effect that the opinions expressed do not necessarily reflect the views of the agency or institution with which the author is affiliated, is omitted in this volume.

Monday, December 27, 1948

10:00 A.M. *Meeting of the Executive Committee*

8:00 P.M. *Round Table in Commemoration of the Centenary of the Communist Manifesto: The Sociology and Economics of Class Conflict*
Chairman: Frederick C. Mills, Columbia University
Papers: Talcott Parsons, Harvard University; David M. Wright, University of Virginia
Discussion: John W. McConnell, Cornell University; M. M. Bober, Lawrence College; Herbert K. Zassenhaus, Colgate University

Tuesday, December 28, 1948

- 10:00 A.M. 1. *Current Research in Business Cycles* (Joint session with the American Statistical Association and the Econometric Society)
Chairman: Bernard F. Haley, Stanford University
Papers: Robert A. Gordon, University of California; Tjalling C. Koopmans, Cowles Commission for Research in Economics
Discussion: James W. Angell, Columbia University; Arthur F. Burns, National Bureau of Economic Research; Gottfried Haberler, Harvard University; Lloyd A. Metzler,¹ University of Chicago
2. *Postwar Monetary and Credit Policies* (Joint session with the American Finance Association)²
Chairman: Ray M. Gidney, Federal Reserve Bank of Cleveland
Papers: Frank D. Graham, Princeton University; William E. Dunkman, University of Rochester; Charles C. Abbott, Harvard University
Discussion: Raymond J. Saulnier, Barnard College and Columbia University; John H. Wills, Northern Trust Company, Chicago
- 12:30 P.M. *Luncheon Meeting* (Joint session with American Finance Association)²
Chairman: Joseph A. Schumpeter, Harvard University
Speaker: Winthrop W. Aldrich, Chase National Bank
Subject: The Management of the Public Debt
- 2:00 P.M. 1. *Interregional Variations in Economic Fluctuations*
Chairman: Arthur F. Burns, Columbia University
Papers: Rutledge Vining, University of Virginia; Philip Neff, Haynes Foundation

¹ No manuscript received.

² To be published in the *Journal of Finance*.

Discussion: George Garvy, Federal Reserve Bank of New York; Walter Isard, American University; Frank L. Kidner, University of California; Robert L. Steiner, Cincinnati, Ohio

2:30 P.M. 2. *Round Table on Economic Research*

Chairman: Simeon E. Leland, Northwestern University

Papers: Howard S. Ellis, University of California; Paul T. Homan, Council of Economic Advisers; Edgar M. Hoover, Council of Economic Advisers; G. W. Ensley, Technical Adviser to Senator Flanders

Discussion: Joseph J. Spengler, Duke University; R. B. Heflebower, Brookings Institution; Alfred C. Neal, Federal Reserve Bank of Boston

3. *The Economic Consequences of Some Recent Antitrust Decisions*

Chairman: Edward S. Mason, Harvard University

Papers: Morris Adelman, Massachusetts Institute of Technology; William H. Nicholls, Vanderbilt University; Alfred J. Nicols, University of California

Discussion: Corwin D. Edwards, Federal Trade Commission; Edwin B. George, Dun and Bradstreet; Kenneth E. Boulding, Iowa State College

3:00 P.M. 4. *The Theory and Measurement of Price Expectations* (Joint session with American Farm Economic Association)

Chairman: Mordecai Ezekiel, Food and Agriculture Organization

Papers: Theodore W. Schultz, University of Chicago; Holbrook Working, Food Research Institute

Discussion: Kenneth E. Boulding, Iowa State College; L. J. Norton, University of Illinois; Warren C. Waite,¹ University of Minnesota

8:00 P.M. *Presidential Address*²

Chairman: Emanuel A. Goldenweiser, Institute for Advanced Study

Joseph A. Schumpeter, American Economic Association

9:00 P.M. *Smoker for All Members*

Wednesday, December 29, 1948

10:00 A.M. 1. *The State of the Inflationary Process*³

Chairman: Dexter M. Keezer, McGraw-Hill Publishing Company

Papers: Abba P. Lerner, Roosevelt College; Seymour E. Harris, Harvard University

Discussion: Fritz Machlup, Johns Hopkins University; Harold M. Somers, University of Buffalo; Henry H. Villard, Hofstra College

2. *Input-Output Analysis and Its Use in Peace and War Economies* (Joint session with the American Statistical Association)

Chairman: Morris A. Copeland, Board of Governors of the Federal Reserve System

Paper: Wassily Leontief, Harvard University

Discussion: Solomon Fabricant, New York University; Irwin Friend and Walter Jacobs, United States Department of Commerce; Marvin Hoffenberg, United States Department of Labor; Tjalling C. Koopmans, Cowles Commission for Research in Economics; Raymond W. Goldsmith, R. W. Goldsmith Associates, Inc.

3. *Collective Bargaining, Wages, and the Price Level* (Joint session with Industrial Relations Research Association)⁴

Chairman: Dale Yoder, University of Minnesota

Papers: Edward S. Mason, Harvard University; Lloyd G. Reynolds, Yale University

Discussion: John T. Dunlop, Harvard University; Eugene Forsey, Canadian Congress of Labour; Clark Kerr, University of California; Wladimir S. Woytinsky, Twentieth Century Fund

2:30 P.M. 1. *Liquidity and Uncertainty* (Joint session with Econometric Society)

Chairman: Paul A. Samuelson, Massachusetts Institute of Technology

Papers: Albert G. Hart, Columbia University; Jacob Marschak, Cowles Commission for Research in Economics

Discussion: Milton Friedman, University of Chicago; Richard M. Goodwin, Harvard University; Franco Modigliani, Cowles Commission for

³ Published in the March, 1949, issue of the *American Economic Review*.

⁴ To be published in the *Review of Economics and Statistics*.

⁵ To be published by the Industrial Relations Research Association.

Research in Economics; Richard A. Musgrave,¹ University of Michigan; James Tobin, Harvard University

2. *Problems of the ITO* (Joint session with American Marketing Association)

Chairman: Clair Wilcox, Swarthmore College

Papers: Margaret S. Gordon, Berkeley, California; J. Herbert Furth, Board of Governors of the Federal Reserve System; John A. Loftus, School of Advanced International Studies

Discussion: James S. Earley, University of Wisconsin; Wolfgang F. Stolper, Swarthmore College; Calvin B. Hoover, Duke University

3. *Commodity Marketing—Going Where?* (Joint session with American Marketing Association)⁶

Chairman: John D. Black, Harvard University

Papers: John K. Galbraith, Harvard University; Alfred Cahen, Dun and Bradstreet; Arthur A. Hood, Vance Publishing Company; Walter F. Crowder, McGraw-Hill Publishing Company

General Synthesis: Reavis Cox, University of Pennsylvania

5:00 P.M. *Session in Commemoration of Wesley C. Mitchell*⁷

5:30 P.M. *Annual Business Meeting*

8:00 P.M. *John Stuart Mill—Centennial Appraisal*

Chairman: Albert B. Wolfe, Ohio State University

Papers: Jacob Viner,⁸ Princeton University; Vincent W. Bladen, University of Toronto

Thursday, December 30, 1948

9:30 A.M. 1. *Collective Bargaining and Management Rights* (Joint session with Industrial Relations Research Association)⁹

Chairman: Sumner H. Slichter, Harvard University

Papers: Leo C. Brown, St. Louis University; Douglass V. Brown, Massachusetts Institute of Technology

Discussion: Carroll E. French, National Association of Manufacturers; Freeman F. Suagee, University of Cincinnati; Robert Tannenbaum, University of California at Los Angeles; Charles Wiedeman, International Association of Machinists

10:00 A.M. 2. *Agriculture and the General Economy—Coming Readjustments* (Joint session with American Farm Economic Association)⁹

Chairman: Howard R. Tolley, F.A.O.

Papers: John D. Black, Harvard University; Dennis A. Fitzgerald, E.C.A.

Discussion: Theodore W. Schultz, University of Chicago; Theodore O. Yntema, Committee for Economic Development

3. *Possibilities for a Realistic Theory of Entrepreneurship* (Joint session with Economic History Association)

Chairman: Arthur H. Cole, Harvard University

Papers: W. T. Easterbrook, University of Toronto; G. Heberton Evans, Jr., Johns Hopkins University

Discussion: Carter Goodrich, Columbia University; W. Rupert MacLaurin, Massachusetts Institute of Technology; Joseph J. Spengler, Duke University

12:30 P.M. *Luncheon Meeting of the Executive Committee*

2:30 P.M. 1. *The Economics of Preparedness for War*

Chairman: I. L. Sharfman, University of Michigan

Papers: Arthur Smithies, E.C.A.; Ewald T. Grether, University of California

Discussion: Ben W. Lewis, Oberlin College; Fritz Machlup, Johns Hopkins University

2. *Present Issues of the Latin-American Economy*

Chairman: Richard F. Behrendt, Colgate University

⁶ Only abstracts of the papers presented are given in this volume. The complete papers may appear in other publications.

⁷ To be published in the June, 1949, issue of the *American Economic Review*.

⁸ Published in the March, 1949, issue of the *American Economic Review*.

⁹ To be published in the *Journal of Farm Economics*.

Papers: John S. de Beers, United States Treasury Department; Felipe Pazos, International Monetary Fund

Discussion: Henry W. Spiegel, Catholic University of America; Felix Weil, Institute of Social Research; Victor Urquidí, International Bank for Reconstruction and Development; George Wythe, United States Department of Commerce; Gerald M. Alter, Board of Governors of the Federal Reserve System

TRANSPORTATION AND PUBLIC UTILITIES

A group of members primarily interested in transportation and public utility problems held two informal sessions during the morning and afternoon of Wednesday, December 29. An abstract of the proceedings of these sessions may be found in this volume (see Table of Contents).

THE LATIN-AMERICAN GROUP

The topic, "Problems and Possibilities of Co-operative Research in Latin America," was discussed at an informal breakfast session held on Thursday, December 30. Those interested in the discussions held on this occasion should communicate with Richard F. Behrendt, Colgate University.

CONFERENCE OF SECRETARIES OF THE ALLIED SOCIAL SCIENCE ASSOCIATIONS

Secretaries and representatives of the various associations meeting in Cleveland held a breakfast meeting on Thursday, December 30, to discuss plans for future joint and several meetings of these related associations.

THE purpose of the American Economic Association, according to its charter, is the encouragement of economic research, the issue of publications on economic subjects, and the encouragement of perfect freedom of economic discussion. The Association as such takes no partisan attitude, nor does it commit its members to any position on practical economic questions. It is the organ of no party, sect, or institution. Persons of all shades of economic opinion are found among its members, and widely different issues are given a hearing in its annual meetings and through its publications. The Association, therefore, assumes no responsibility for the opinions expressed by those who participate in its meetings.

JAMES WASHINGTON BELL
Secretary

JOHN STUART MILL'S *PRINCIPLES*: A CENTENARY ESTIMATE

By VINCENT W. BLADEN
University of Toronto

I propose first to say something about the approach adopted in this paper, not so much to facilitate understanding of the paper itself, as to ask for serious consideration of the value of this approach to the study of the literature of political economy in general. It is very different from that of Professor Frank Knight, if the opening statement in his brilliant article on the "Ricardian Theory of Production and Distribution"¹ is to be taken literally. He there said: "On the assumption that the primary interest in the 'ancients' in such a field as economics is to learn from their mistakes, the principal theme of the discussion will be the contrast between the 'classical' system and 'correct' views." It is not my intention to judge the "correctness" of Mill's views. Nor do I intend to attempt the task which I think was in Professor Schumpeter's mind when he asked me to prepare this paper; namely, to estimate the progress of our science in the century which has elapsed since the first publication of Mill's *Principles*. Such an estimate of how much better we handle economic problems than did John Stuart Mill is a task for which I do not feel competent; but it is also a task which I would not be particularly happy to attempt.

I am not interested in looking down from the heights that we have since achieved to point out the inadequacies of the "founders." I am inclined to look back to see what we can still learn from them. (I do not think that I underestimate the progress that we have made; but I am concerned that we should not overestimate the heights we have achieved nor underestimate the height of the peaks yet to be scaled.) I am inclined to interpret the "classics" generously, in the manner of Alfred Marshall rather than of Edwin Cannan. I am inclined to try to discover what questions they were asking and trying to answer rather than assuming, as is so easy and natural, that they were trying to answer the questions that we now ask. I am inclined, too, to read their books, to try to rediscover the "real" views of the classical writers rather than accepting the "myths" which have become current.

This statement of my approach is, of course, an indication of how I want to behave rather than of how I do behave. As the paper progresses it will become only too obvious that I, too, have my axes to grind, and that my selection of topics for discussion and my interpretation of

¹ *Canadian Journal of Economics and Political Science*, February and May, 1935.

Mill's views on these topics is influenced by my desire to have good whetstones on which to grind them. But I believe in the approach even if I do not live up to it.

Method. In his early essay "On the Definition of Political Economy and on the Method of Investigation proper to it," Mill proclaimed his belief in the "abstract" character of the science, and in the proper method as a priori.

It reasons, and, as we contend, must necessarily reason, from assumptions not from facts. . . . Geometry proposes an arbitrary definition of a line. . . . Just in the same manner does Political Economy presuppose an arbitrary definition of a man, as a being who invariably does that by which he may obtain the greatest amount of necessities, conveniences and luxuries with the smallest quantity of labour and physical self-denial with which they can be obtained in the existing state of knowledge.

Mill went on to regret that this "definition of man is not formally prefixed to any work on Political Economy, for if it were there would be less danger of it being forgotten." He would, in Professor Knight's phrase, "placard the unrealities of the postulates." He warned the economist to be "on his guard not to ascribe to conclusions which are grounded upon an hypothesis a different kind of certainty from that which really belongs to them. They would be true without qualification, only in a case which is purely imaginary."

All of this is very sound comment on the character and limitation of what we would now call "pure theory," what Mill referred to in his preface as "pure political economy." But Mill discussed the method a priori not only as a legitimate method, but as the only legitimate method. "It is vain," he said, "to hope that truth can be arrived at, either in Political Economy or in any other department of the Social Science, while we look at facts in the concrete, clothed in all the complexity which nature has surrounded them, and endeavour to elicit a general law by a process of induction." Yet he urged the political economist to study the facts. "Although a philosopher be convinced that no general truths can be attained in the affairs of nations by the a posteriori road, it does not the less behove him . . . to sift and scrutinize the details of every specific experiment. Without this, he may be an excellent professor of abstract science." But "he must rest content to take no share in practical politics, to have no opinion, or to hold it with extreme modesty, on the applications which should be made of his doctrines to existing circumstances."

Before writing the *Principles*, Mill wrote his *Logic*; he again discussed the problem of method, but this time he was concerned with the social sciences in general rather than with political economy in particular. The approach remained substantially the same: "The conclusions of theory cannot be trusted, unless confirmed by observation;

nor those of observation, unless they can be affiliated to theory." This indicates some further recognition of the value of "observation," due probably to the influence of Comte. It was, however, for "ethology" and particularly for the "general science of society" that this "inverse deductive or historical method" was suggested. This general science of society was concerned with the laws of the development of social institutions. This, he saw, required historical study, not only for verification, but for suggestion of hypotheses.

While it is an imperative rule never to introduce any generalization from history into the social science unless sufficient grounds can be pointed out for it in human nature, I do not think anyone will contend that it would have been possible, setting out from the principles of human nature and from the general circumstances of the position of our species, to determine a priori the order in which human development must take place, and to predict, consequently, the general facts of history.

But for political economy the method remained deductive, "reasoning from one law of human nature" and from "the principal outward circumstances (whether universal or confined to particular states of society)."

One should not take too seriously what people say about method; what they do is often very different. In the *Principles* Mill decided to follow the example of Adam Smith in "associating the principles with the applications." This, he recognized in his preface, "implies a much wider range of ideas and of topics than are included in Political Economy, considered as a branch of abstract speculation," for there are, perhaps, no practical questions "which can be decided on economical premises alone." That Mill was wise in choosing to go beyond the bounds of the abstract science can scarcely be doubted. He might, perhaps, have been readier to distinguish those propositions which were precise but limited in application by the nature of the assumptions from which they were deduced, from those propositions which were less precise but were relevant to the real society, not the unreal model. But he might also have been more confident, and more venturesome, in his study of the actual. He recognized that in society "custom" was a determinant of income distribution along with "competition." But he had not yet perceived the possibility of the "scientific" study of custom. "Only through the principle of competition," he said, "has political economy any pretension to the character of a science." Recognition of the modifying influence of custom was essential: "to escape error, we ought, in applying the conclusions of political economy to the actual affairs of life to consider not only what will happen supposing the maximum of competition, but how far the result will be affected if competition falls short of the maximum." But he gave no estimate of how far short of the maximum competition did fall and no estimate of how much the result was affected.

Curiously enough he said little about another source of divergence between "the laws of the science and the facts of life" arising from the unreality of the concept of the economic man. Professor Edgeworth questioned, in his article in Palgrave's *Dictionary*, whether Mill could consistently retain his view of the deductive character of the science as he began to "doubt the universality of the principle of self-interest." This doubt was reflected in his chapter on communism where he said: "Mankind are capable of a far greater amount of public spirit than the present age is accustomed to suppose possible." But his eulogy of peasant proprietorship, and for that matter of co-operative factories, was based on the expectation of increased productivity from "placing the labourers, as a mass, in a relation to their work which would make it their principle and their interest—at present it is neither—to do the utmost, instead of the least possible, for their remuneration." It was a somewhat distant future to which he looked forward when it would "no longer either be, or be thought to be, impossible for human beings to exert themselves strenuously in procuring benefits which are not to be exclusively their own." The principle of self-interest might not be universal, but it was recognized to be very powerful.

In all of this I am, of course, preaching, by implication. Perhaps I should be more direct. Let us be rigorous in our theory and constantly aware of the unreality of our models. The more we complicate them, approaching nearer to reality, the more important it is to emphasize their unreality, for the easier it is to forget how great is the gulf between the most complicated of our models and the world of flesh and blood and changing social institutions. Let us be ready to observe how people really do behave and build some of our models on the basis of observed uniformities, as is the manner of much modern macro-economic theory, rather than all on the assumption of "rational" behaviour.² Let us take to heart Marshall's warning: "I conceive no more calamitous notion than that abstract, or general, or 'theoretical' economics was economics 'proper.' It seems to me an essential but a very small part of economics proper." Let us remember, too, that economics is only one of the social sciences, the most successful but unfortunately the most arrogant of them. Finally, let us study real life and not, by worrying over conformity to "scientific method," limit our study to the areas where it is easier to be "scientific." Let us take seriously to heart Professor Redfield's recent article in the *American Journal of Sociology* on "The Art of Social Science." As Marshall put it: "The economist needs the three great intellectual faculties, perception, imagination and reason: and most of all he needs imagination-

² See V. W. Bladen, "Economics and Human Relations," *Canadian Journal of Economics and Political Science*, August, 1948.

tion." In Mill's *Principles* perception and imagination played a bigger part than was written for them in the *Logic*.³

Social Philosophy. It was Mill's purpose in the *Principles*, as expressed in his preface, "to exhibit the economical phenomena of society in the relation in which they stand to the best social ideas of the present time." It is appropriate therefore to indicate some of the elements of the social philosophy which resulted from the blending in his mind of Benthamism, Positivism, and Romanticism. In his autobiography Mill has recorded the several influences to which he was exposed. The story is familiar and will not be repeated here. Attention will be centered on the product rather than the process of the blending. Because this is also the centenary of the publication of the Communist Manifesto, and because our view of Mill has been influenced by the Marxian picture of the "bourgeois" economist, it may be well to begin by some comparisons and contrasts between Marx and Mill.⁴

The bourgeois economist is supposed by the Marxian to accept the capitalist system as permanent, "as part of the eternal order of nature." Now Mill was certainly a bourgeois economist even though Marx would not "class him with the herd of vulgar economic apologists." A similar charge was made against the classical economists by the writers of the Historical School, and Mill was their butt.⁵ Yet clearly Mill did not consider the social and economic institutions of the England of his day as either universal or permanent. He made a very clear distinction between certain parts of his *Principles* which he believed to have general validity and other parts, like the laws of distribution, which were related to particular institutions. "The distribution of wealth," he says, "depends on the laws and customs of society. The rules by which it is determined are what the opinions and feelings of the ruling portion of the community make them." He recognized that these "opinions and feelings" were not "a matter of chance" but considered "the laws of the generation of human opinions" to be outside the scope of his study. That he was ready to restrict himself in this way in the *Principles* is, perhaps, explained by his estimate of the rate of future change. While Marx and Engels saw social revolution just around the corner, Mill was confident that "the political economist for a considerable time to come, will be chiefly concerned with the conditions of existence and progress belonging to a society founded on

³ See Kenneth Boulding's review article, "Samuelson's *Foundations*: the Role of Mathematics in Economics," *Journal of Political Economy*, June, 1948. "Insight (judgment) and logic (mathematics) are strictly complementary goods."

⁴ See, for elaboration of this section, V. W. Bladen, "The Centenary of Marx and Mill," to be published in *The Tasks of Economic History*, 1948, a supplement to the *Journal of Economic History*.

⁵ See V. W. Bladen, "Mill to Marshall: the Conversion of the Economists," in *The Tasks of Economic History*, 1941, a supplement to the *Journal of Economic History*.

private property and individual competition." In a sense that "considerable time" has not yet elapsed; or has it? Has the process of institutional change been so rapid that it cannot properly be excluded even from studies concerned with policy at a given time and in a given place?

But if Mill looked forward to the continued "existence" of the society, founded on private property, he was not complacent. He was concerned with the possibility of "progress." "The object to be principally aimed at in the present stage of human improvement is not the subversion of the system of individual property, but the improvement of it, and the full participation of every member of the community in its benefits." His views are put forcibly in the chapter on communism (not, it need hardly be said, the Marxian variety of communism, but certain forms of "utopian socialism").

If, therefore, the choice were to be made between communism with all its chances, and the present state of society with all its sufferings and injustices; if the institution of private property necessarily carried with it as a consequence, that the produce of labour should be apportioned as we now see it, almost in inverse ratio to the labour—the largest portions to those who have never worked at all, the next largest to those whose work is almost nominal, and so in descending scale, the remuneration dwindling as the work grows harder and more disagreeable, until the most fatiguing and exhausting bodily labour cannot count with certainty on being able to earn even the necessities of life; if this or Communism were the alternative, all the difficulties, great or small, of Communism would be as dust in the balance. But . . . we must compare Communism at its best, with the regime of individual property, not as it is, but as it might be made. The principle of private property has never yet had a fair trial.

The comparison of these social systems, however, involves more than economic values. The decision between them, Mill believed, "will depend" (surely here the wish was father to the thought) on a judgment as to which "is consistent with the greatest amount of human liberty and spontaneity." "After the means of subsistence are assured," he said, "the next in strength of the personal wants of human beings is liberty." The socialist schemes with which he was familiar seemed to involve renouncing "liberty for the sake of equality." Though he recognized that "the restraints of Communism would be freedom in comparison with the present condition of the majority of the human race," he again urged his readers not to make the comparison with the "present bad state of society." It was not sufficient "that it [communism] should promise greater personal and mental freedom than is now enjoyed by those who have not enough of either to deserve the name." But equally it was not sufficient to accept the "unfree" condition of the existing society and denounce the restrictions on freedom in the socialist schemes. *The Road to Serfdom* suggests that it is a road from freedom. Perhaps we should re-examine the degree of freedom in our society in the light of Mill's criticism of his England: "The generality of labourers . . . have as little choice of occupation or freedom of locomotion, are practically as dependent on fixed rules and

on the will of others, as they could be in any system of slavery." With this should be read what Mill had to say at the beginning of his chapter on the "Probable Futurity of the Labouring Classes" where he discussed "the two conflicting theories respecting the social position desirable for manual labourers," the "theory of dependence and protection" and the "theory of self dependence." Liberty implies independence. There were those who were arguing for the paternal relationship between the rich and the poor, "affectionate tutelage on the one side, respectful and grateful deference on the other" ("spaniel-like servility" was the phrase William Thomas Thornton used). To them Mill pointed out that "all privileged and powerful classes have used their power in the interest of their own selfishness, and have indulged their self importance in despising, and not in lovingly caring for, those who were, in their estimation, degraded by being under the necessity of working for their benefit." He made it clear that even if the "superior class could be sufficiently improved to govern in the tutelary manner supposed, the inferior classes would be too much improved to be so governed. . . . Of the working men, at least in the more advanced countries of Europe, it may be pronounced certain, that the patriarchal or paternal system of government is one to which they will not again be subject." A hundred years later one may wonder how completely dead is the theory, or for that matter the fact, of "dependence."

The economist is concerned with wealth, but here other values—freedom and independence—have pushed their way into the inquiry. How wide the range of values the political economist must be prepared to consider may be illustrated by some samples of "preaching" by Mill. The first relates to the qualities of hard work and thrift which are important factors in the theory of production. In England and the United States, he said, "it is not the desire of wealth that needs to be taught, but the use of wealth. Every real improvement in the character of the English or Americans, whether it consist in giving them higher aspirations, or only more numerous and better pleasures, must necessarily moderate the all engrossing torment of their industrialism." In similar vein in discussing the accumulation of capital he referred to the "extreme incapacity of the [English] people for personal enjoyment." Again in the chapter on the "stationary state" he indicated his doubts as to the "value" of increasing wealth. Of the Americans he said: "They have the six points of Chartism, and they have no poverty: and all that these advantages seem to have done for them is that the life of the whole of one sex is devoted to dollar hunting and of the other to breeding dollar hunters." He went on to make a plea for the preservation of natural beauty: "Solitude in the presence of natural beauty and grandeur is the cradle of thoughts and aspira-

tions which are not only good for the individual, but which society could ill do without." There is little satisfaction in contemplating a world "with nothing left to the spontaneous activity of nature," with "every flowery waste or natural pasture ploughed up, all quadrupeds or birds which are not domesticated for man's use exterminated as his rivals for food . . . scarcely a place left where a wild shrub or flower could grow without being eradicated as a weed in the name of improved agriculture." So he feared that the earth might lose that "great portion of its pleasantness which it owes to things that the unlimited increase of wealth and population would extirpate from it."

Political Economy. I now turn to examine the structure of the *Principles*, with some running commentary. The first book is on "Production." It is concerned with the wealth of nations, not, as is the modern manner, with the theory of the firm. In spite of the sharp distinction he made between the laws of production and distribution, Mill clearly recognized the effect on "the degree of productiveness" of all sorts of institutional factors, including different property relationships. "No improvements operate more directly upon the productiveness of labour, than those in the tenure of farms and in the laws relating to landed property." The book closes on the Malthusian theme: "Though improvement may during a certain space of time keep up with, or even surpass, the actual increase of population, it assuredly never comes up to the rate of increase of which population is capable; and nothing could have prevented a general deterioration in the condition of the human race, were it not that population has in fact been restrained."

The three chapters on capital in the first book involve peculiar difficulty. A theory of capital is mixed up with a theory of employment, and both are rendered more difficult by confusion of "real" and "monetary" processes. J. S. Nicholson described the "fundamental propositions respecting capital" as a "strange combination of axiom and paradox, of error exposed and truth suppressed, of practical wisdom and unreal hypothesis." The fourth proposition, that "the demand for commodities is not demand for labour," called by Edgeworth the "*locus vexatissimus*" of economics, has exercised the ingenuity of successive generations of economists. I cannot refrain from adding to the stream of discussion. Mill, no doubt, paid too little attention to the importance of expected demand as a basis for continued investment. An important barrier to his understanding lay in his concentration on the "real" basis of production and distribution and his unwillingness to concede an active role to the "mere mechanism of exchange." "The demand for commodities is a consideration of importance rather in the theory of exchange, than in that of production." His view of the relation of saving to the demand for labor is best indicated in his

discussion of the "first proposition." "Suppose that every capitalist came to be of opinion that, not being more meritorious than a well conducted labourer, he ought not to fare better; and accordingly laid by, from conscientious motives the surplus of his profits. . . . How is the increased capital to find employment? Who is to buy the goods which it will produce?" Now Mill assumed that what was saved would be spent in hiring laborers; this would either increase employment or wages. "What follows? That the labourers become consumers of luxuries. . . . The increased accumulation and increased production might, rigorously speaking continue until every labourer had every indulgence of wealth, consistent with continuing to work. . . . The limit of wealth is never deficiency of consumers, but of producers and productive power." This, I suppose, could happen, and insofar as what was not spent by one group was handed over immediately to a group who could be relied on to spend it immediately there would be no problem of "effective demand." But can one rely on habitual behavior to guarantee that the funds will be used to hire labor; or must one rely on some "early Christian" impulse to give to the poorer members of society, or should one pay some attention to the incentive of expected profit based on an expectation of demand?

But if Mill underestimated the importance of expectations do we not underestimate the problem of "financing" production in those days when financial institutions were less developed and monetary institutions were less elastic? Secondly, should we not note how many of the refutations of this proposition suffer from a similar defect to that in his own argument? He was certain that what was saved would be spent in hiring labor; they were equally certain that purchases of commodities would lead immediately to production to maintain inventories. Both neglected expectations. Thirdly, turning from the logic to the sentiments, should we not recognize Mill's fear that the worries about oversaving might lead to an economics of restriction. (Chalmers, said Mill, "inculcates on capitalists the practice of a moral restraint in the pursuit of gain; while Sismondi deprecates machinery.") Finally it is interesting to note that investment in fixed capital, while recognized as important for future productive power, was treated as just another variety of "demand for commodities." Indeed if investment "took place suddenly to a great amount . . . much of the capital sunk must necessarily . . . be provided from funds already employed as circulating capital," and "the labouring classes must suffer." For example: "If the whole of the railways which, during the speculative madness of 1845, obtained the sanction of Parliament, had been constructed in the times fixed for the completion of each, this probable contingency would, most likely, have been realized." Though we may doubt whether Mill saw clearly through the problem, in these days of

inflation we may be readier to recognize that, in real terms, investment beyond a certain scale does mean lower real wages, whatever the economic institutions may be.

The second book is on "distribution." Two thirds of it is devoted to the discussion of the institutions of property and an "examination of those simpler forms of social economy [peasant proprietorship, metayage, etc.] in which the produce of land belongs undividedly to one class, or is shared only between two classes." The last third is devoted to "the threefold division of the produce, among labourers, landlords, and capitalists." Though it is not clearly stated, the transition has been made to the "abstract science." What is amazing to the modern theorist, even after the cavalier treatment of the "mere mechanism of exchange" in Book I, is that the problem of distribution is attacked without reference to the theory of value which is left to the third book. Nor was this a mere oversight. At the end of Book III he added a chapter, "Of Distribution as affected by Exchange." "It is evident," he said, "that the law of Wages is not affected by the existence, or non-existence of Exchange or Money." The unification of the theory of the pricing of commodities and the pricing of the factors of production was the contribution of the neoclassical writers of the next generation, a more important contribution than the slight refinement of the theory of value associated with their solution of the paradox of utility and the application of simple mathematical formulations. But perhaps we need to pay more attention to the "real" process. Again the dominant note of the book is Malthusian, though not entirely pessimistic. "No remedies for low wages have the smallest chance of being efficacious which do not operate on and through the minds and habits of the people." "For the purpose of altering the habits of the labouring people there is need of a twofold action, directed simultaneously upon their intelligence and their poverty. An effective national education of the children of the working class, is the first thing needful; and, coincident with this, a system of measures which shall (as the Revolution did in France) extinguish extreme poverty for one whole generation."

The third book, on "Exchange," is the most "modern." Professor Edgeworth's estimate seems sound: "The general theory of demand and supply seems to be stated by Mill as clearly as is possible without the aid of mathematical apparatus." Marshall's essay in the *Fortnightly Review* may also be cited in support of this estimate and in defence of Mill against the attacks of Jevons. In this book are found also the chapters on money and international trade. Perhaps these last have best stood the test of time.

The fourth book is on the "influence of the progress of society on

production and distribution." The first three books contained "the economical laws of a stationary and unchanging society." It remained to consider "the economical condition of mankind as liable to change and indeed . . . as at all times undergoing progressive change. We have to consider what these changes are, what are their laws, and what their ultimate tendencies; thereby adding a theory of motion to our theory of equilibrium—the Dynamics of political economy to the Statics." Though in this preliminary chapter he casts his net wide and appears ready to attack the really dynamic problems of economic society, the dynamics of institutional change, he hurriedly retreats to the "comparative statics" of Ricardo, with population, accumulation, technology, and the ultimate "law of diminishing returns" playing their parts. Still the Malthusian theme is dominant: "Population almost everywhere treads close on the heels of agricultural improvement and effaces its effects as fast as they are produced." As this is the last reference to population, I would interject some comments. I suggest that Mill was predisposed to believe in the "Malthusian devil" by his feelings about the rights of women. In the *Principles* he says of those who denounce "hard hearted Malthusianism" that they forget that "the conduct which it is reckoned so cruel to disapprove is a degrading slavery to a brute instinct in one of the persons concerned, and most commonly, in the other helpless submission to a revolting use of power." Or again: "It is seldom by the choice of the wife that families are numerous." His position is most forcibly put in a letter to a certain Professor Green in India. "More important than the economic problem," he there said, "is the perpetuation of the previous degradation of women. . . . That degradation and slavery is, in itself, so enormous an evil . . . that the limitation of the number of children would be in my opinion, absolutely necessary to place human life on its proper footing, even if there were subsistence for any number which could be produced." The change in mores that these passages herald brought a new problem, which had worried Malthus but not Mill. This problem was whether there would be enough children to maintain the population if parents began to "plan" their families. It is very proper that the sesquicentennial of the "First Essay on Population" and the centennial of Mill's *Principles* should fall in the same year.

The fourth book concludes with two remarkable chapters, one on the "stationary state" and the other on the "probable futurity of the labouring classes." In this latter chapter Mill ventures to predict the direction of social change. Mrs. Taylor's enthusiasm may have dulled his insight; but it was surely Mill reasserting himself when he added to the third edition the panegyric on competition. The co-operatives were to compete! "Instead of looking upon competition as the baneful

and anti-social principle which it is held to be by the generality of Socialists, I conceive that . . . every restriction of it is an evil. . . . To be protected against competition is to be protected in idleness, in mental dulness."

The fifth and final book is on the "Influence of Government." In the first few chapters he considered "the economical effects arising from the manner in which governments perform their necessary and acknowledged functions." These deal with taxation, property and contract, including some subjects unduly neglected by later economists, such as the economical effect of insolvency laws. There follows a chapter on "interferences of government grounded on erroneous theories." "Protectionism" was selected as the "most notable" of these "false theories." "The only case in which on mere principles of political economy protecting duties can be defensible, is when they are imposed temporarily (especially in a young and rising nation) in hopes of naturalizing a foreign industry, in itself perfectly suitable to the circumstances of the country." Another instance of "mischievous" interference was the Usury Laws. Mill here followed Bentham rather than Adam Smith. Finally one may note his denunciation of the laws against combinations of workmen. "Though combinations to keep up wages are seldom effectual, and when effectual . . . seldom desirable, the right of making the attempt is one which cannot be refused to any portion of the working population without great injustice, or without the probability of fatally misleading them respecting the circumstances which determine their condition." As long as combinations were prohibited by law "that law appeared . . . to be the real cause of the low wages."

In his last chapter he explored the range of "optional" government functions that can be justified. It is appropriate to illustrate by reference to his plea for the provision of endowments "for the maintenance of what has been called a learned class." "The cultivation of speculative knowledge, though one of the most useful of all employments, is a service rendered to the community collectively, not individually, and one consequently for which it is, *prima facie*, reasonable that the community collectively should pay. . . . It is highly desirable, therefore, that there should be a mode of insuring to the public the services of scientific discoverers, and perhaps of some other classes of savants, by affording them the means of support." This plea has had a fair response so far as natural science is concerned. The current need is for underwriting the social sciences and the humanities.⁸

⁸ See *Report of the Committee on the Provision for Social and Economic Research* (London, 1946, Cmd. 6868); also note on this report in *Canadian Journal of Economics and Political Science*, May, 1947; also *Higher Education for American Democracy* (Report of the President's Commission on Higher Education).

ROUND TABLE IN COMMEMORATION OF THE
CENTENARY OF THE COMMUNIST MANIFESTO:
THE SOCIOLOGY AND ECONOMICS OF
CLASS CONFLICT
OPENING REMARKS

By FREDERICK C. MILLS, *Chairman*

This is a commemorative meeting. Perhaps I should note that to commemorate is to call to remembrance. We may call to remembrance a great diversity of things and events, which we think it well to review because of their effects on the thoughts and fortunes of men. The Battle of Waterloo, the Blizzard of 1888, Magna Charta and the Declaration of Independence alike call for commemoration if historical perspectives are to aid us in understanding the present. It is in this sense, I think, that we are meeting tonight, to take note of the hundredth anniversary of the issuance of a document that has profoundly affected mankind, that possessed and still possesses extraordinary vitality, that by any standard must be recognized as one of the great documents of history. We give attention to it as we should attend to any great natural force.

The Communist Manifesto was born in a year of turmoil, of festering unrest throughout Europe. It was at once a eulogy of the colossal productive forces unleashed by the *bourgeoisie* and a bitter denunciation of the institutions and practices of industrial capitalism; it professed to chart a path of historical progression that is inevitable and irreversible; it provided an organizing principle, a program of action, and a faith that have shaped and held the minds of many men; its influence today is perhaps more extensive than at any time in the last hundred years.

It is not my purpose, in these brief introductory remarks, to attempt an evaluation of Marxist economics. However, that somber figure, Marx, is no more to be ignored by the student of economic life and thought than by the student of social change. His analysis thrust economic power onto the center of the stage, as a factor in men's lives. The boldness of his conceptions impressed a new dimension on economics—the dimension of time. The concept of sequence, of process, of cumulative change which stems from Marx is basic in economic thought today. He was an empiricist in the details of his work if not in the application of his findings. He gave a place to evidence in economic analysis that was granted by few among his contemporaries. The sweeping grandeur of

his hypotheses, viewed merely as intellectual creations, compels respect for the power of his mind.

When we view these contributions in the perspective of time we can see major limitations. Marx's appraisal of historical forces and his view of the inevitability of historical processes are supported neither by the record of 1848-1948 nor by the findings of more widely ranging scholarship. For all his empiricism he yet leaned upon metaphysical faith for some of his basic postulates. With many another before and since, he based what he took to be timeless generalizations on passing circumstances. He was a dark, unhappy figure; but we must recognize in him one of the great minds among those who have devoted themselves to the study of economic affairs.

The great constructs of scientific thought—the theory of natural selection, the law of the conservation of energy, the theory of relativity—have been “engines of inquiry,” powerful instruments for the organization of observations and the advancement of knowledge. They both implement and open the mind. The Communist Manifesto and the doctrine of historical materialism and the theories of development it embodies have indeed implemented men's minds for the study of economic processes and have provided a massive principle for the organization of the data of economics. To this extent they have been major contributions to the sciences of society. But for the true believer they do not open the mind; in providing one vista they shut off the possibility of others; they do not pave the way for expanding conceptions and widening understanding. In this they fail to meet the cardinal requirement of scientific worth. The full system Marx gave the world is thus an imperfect and twisted instrument of inquiry. It provides tools of analysis; it has, indeed, given revealing insights; but in subtle form it takes away while it gives. For in inhibiting the free play of the spirit of inquiry it places blinders on the mind.

It is a nice question as to whether these inhibitions on freedom of inquiry are inherent in the original doctrine, or whether they have been imposed in its subsequent development. I think there is much in the original formulation, and in Marx's own approach, to warrant the view that the closed character of the Marxist intellectual system, its frightening imperviousness to the usual methods of scientific review and modification, were built in by its founder. The freezing of a theory into a dogma, the conversion of what could have been a potent instrument for the interpretation of social change into a tool of propaganda and an article of faith—these seem to have been inherent features of the system Marx himself built, and elements of the spirit he breathed into it. It is true that there was a striking dualism in Marx.

Marx the revolutionary advocate is the figure that bulks large today. But Marx the scholar was driven by the purest instinct of workmanship; his labors have few parallels in the history of economics. In the historical outcome it was the advocate who triumphed over the scholar. As inhabitants of the Western World in the year 1948 we must deeply regret this. As economists and sociologists we can deplore the form taken by a great intellectual construct and the blinders placed in its name on the spirit of scientific inquiry.

The Communist Manifesto was a natural child of its time. It appeared five years after Carlyle's burning indictment of British industrialism, in *Past and Present*, and in the same year as Thoreau's "Essay on Civil Disobedience." The Manifesto itself was an amalgam of ideas prevalent in revolutionary and intellectual circles in the fifth decade of the nineteenth century. Feuerbach, Bakunin, St. Simon, Friedrich Engels, and many others had contributed to the boiling stew of revolutionary thought; back of them all was Hegel's towering figure. But the synthesis was Marx's own, bearing an imprint that could have been given it by no other.

Marx's own view was that his distinctive contribution in the Manifesto was to prove that the existence of classes is bound up with particular historic phases in the development of production, that the class struggle necessarily leads to the dictatorship of the proletariat, and that this dictatorship is transitional to the abolition of all classes and the emergence of a classless society. It is with this strategic concept of social classes that the following papers deal.

SOCIAL CLASSES AND CLASS CONFLICT IN THE LIGHT OF RECENT SOCIOLOGICAL THEORY

By TALCOTT PARSONS
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I. *The Marxian View as a Point of Departure*

Nineteen hundred and forty-eight is the centenary of the Communist Manifesto—the first major theoretical statement of Marxism—and some stocktaking of where Marx and Engels stood in an important line of the development of social science rather than only as the ideological founders of “scientific socialism” is in order.

The president of the American Economic Association, Professor Schumpeter,¹ has particularly clearly distinguished these two aspects of Marx's work. He has also within the scientific component distinguished Marx, the economic theorist, from Marx, the sociologist. In both respects I should like to follow Professor Schumpeter.

From my point of view, looking toward the development of modern sociological theory, Marx represented a first major step beyond the point at which the Utilitarian theorists, who set the frame of reference within which the classical economics developed, stood. Marx introduced no fundamental modification of the general theory of human social behavior in the terms which this school of thought represented. He did, however, unlike the Utilitarians, see and emphasize the massive fact of the structuring of interests rather than treating them as distributed at random. The structure of the productive forces which Marx outlined it for capitalist society is real and of fundamental importance. Naturally, many refinements in the presentation of the structural facts and their historical development have been introduced since Marx's day, but the fundamental fact is certainly correct. The theory of class conflict is an integral part of this. It is of great interest to sociology.

Marx, however, tended to treat the socioeconomic structure of capitalist enterprise as a single indivisible entity rather than breaking it down analytically into a set of the distinct variables involved in it. It is this analytical breakdown which is for present purposes the most distinctive feature of modern sociological analysis, and which must be done to take advantage of advances that have taken place. It results both in a modification of the Marxian view of the system itself and enables the establishment of relations to other aspects of the total social system, aspects of which Marx was unaware. This change results

¹ J. A. Schumpeter, *Capitalism, Socialism and Democracy*.

in an important modification of Marx's empirical perspective in relation to the class problem as in other contexts. The primary structural emphasis no longer falls on the orientation of capitalistic enterprise to profit and the theory of exploitation but rather on the structure of occupational roles within the system of industrial society.

Thus class conflict and its structural bases are seen in a somewhat different perspective. Conflict does not have the same order of inevitability, but is led back to the interrelations of a series of more particular factors, the combinations of which may vary. Exactly how serious the element of conflict is becomes a matter of empirical investigation. Similarly, the Marxian utopianism about the classlessness of communist society is brought into serious question. There is a sense in which the Marxian view of the inevitability of class conflict is the obverse of the utopian factor in Marxian thought.

It should, however, be clearly noted how important Marx was in the development of modern sociological thought. All three of the writers who may be regarded as its most important theoretical founders—Vilfredo Pareto, Émile Durkheim and Max Weber—were profoundly concerned with the problems raised by Marx. Each of them took the Marxian view with great seriousness as compared with its Utilitarian background, but none of them ended up as a Marxian. Each pushed on to a further development in a distinctive direction which in spite of the diversity of their backgrounds contains a striking common element.²

II. *The Approach to the Analysis of Social Stratification in Terms of Modern Sociological Theory*

On the basis of modern sociological approach, it may perhaps be said that Marx looked at the structure of capitalistic enterprise and generalized a social system from it, including the class structure and, to him, the inevitable conflicts involved in it. Conversely, the concept of the generalized social system is the basis of modern sociological thinking. Analyzed in this framework, both capitalistic enterprise and social stratification are seen in the context of their role in such a social system. The organization of production and social stratification are, of course, both variable in these terms, though also functionally related to each other. For the functional basis of the phenomena of stratification, it is necessary to analyze the problem of integrating and ordering social relationships within a social system. Some set of norms governing relations of superiority and inferiority is an inherent need of every stable social system. There will be immense variation,

² Talcott Parsons, *The Structure of Social Action*.

but this is a constant point of reference. Such a patterning or ordering is the stratification system of the society.

As with all other major structural elements of the social system, the norms governing its stratification tend to become institutionalized; that is, moral sentiments crystallize about them and the whole system of motivational elements (including both disinterested and self-interested components) tends to be structured in support of conformity to them. There is a system of sanctions, both formal and informal, in support; so that deviant tendencies are met with varying degrees and kinds of disapproval, withdrawal of co-operation, and positive infliction of punishment. Conversely, there are rewards for conformity and institutionalized achievements.³

It follows that in relation to the problem of social class as in other fields, the general problem of economic motivation must be viewed in an institutional context. Even the system of profit seeking of modern capitalism is, there is abundant evidence, an institutionalized system. To be sure, it grew up as a result of emancipation from previous institutional controls in a pre-capitalistic order, but it could not have become established and stabilized to the extent that actually happened had it not had a positive system of moral sentiments underlying it and had it not acquired an institutional status of its own. The Marxian interpretation of this problem tends to see the structuring and control of self-interest only in terms of the realistic situation in which people are placed. Modern sociological theory accedes fully to the importance of this aspect, but insists that it must be seen in combination with a structure of institutionalized moral sentiments as well, so that conformity is determined by a system of mutually reinforcing situational pressures and subjective motivational elements, which in one sense are obverse aspects of the same process.

III. *The Fundamentals of Stratification in a Modern Industrialized Social System*

The distinctive feature of this structure called "social stratification" is that it ranks individuals in the general social hierarchy in generalized terms, not in any one specific context. For the sake of simplicity, we may first speak specifically of the importance of two such contexts in a modern industrial society and then of the articulations between them.

Looked at in the large, by far the most prominent structure of modern Western society is that organized around the "work" people

³ See Talcott Parsons, *Essays in Sociological Theory*, for a variety of different discussions of the problem of institutionalization and its relation to motivation on the psychological level.

do, whether this work is in the field of economic enterprise, of governmental function, or of various other types of private nonprofit activity, such as that of our own academic profession. The extremely elaborate division of labor, which permits a tremendous specialization of functions of this sort, of course necessitates an equally elaborate system of exchange, where the products of the work of specialized groups (whether they be material or immaterial) are made available to those who can utilize them, and vice versa, the specialist is enabled to live without performing innumerable functions for himself, because he has access to the results of the work of innumerable others. Similarly, there must be a property system which regulates claims to transferable entities, material or immaterial, and thereby secures rights in means of life and in the facilities which are necessary for the performance of function. The whole complex of structural elements in our society may be called "the instrumental complex." Its three fundamental elements—occupation, exchange, and property—are all inextricably interdependent.

On a high level of the structural differentiation of a social system, the occupational system seems to be the least variable of the three and thus in a certain sense structurally the most fundamental. Elaboration of the system of exchange and its segregation from functionally irrelevant contexts are certainly essential. But there may be great variation in the extent to which the units in the exchange process enjoy autonomy in their decisions and are thus free to be oriented to their own "profit" or act merely as agents of a more comprehensive organization. Similarly, though presumably something like the Roman-modern institution of ownership is called for, the organization units in which such rights inhere may also vary, and with them the line between property and contractual rights.

Within such ranges of variation, a highly developed system of occupational roles, with functional considerations dominating them, will tend to have certain relatively constant features. Perhaps the most important of these features, seen in comparative perspective, is its inherently "individualistic" character. That is, the status of the individual must be determined on grounds essentially peculiar to himself, notably his own personal qualities, technical competence, and his own decisions about his occupational career and with respect to which he is not identified with any solidary group.

This is, of course, not in the least to suggest that he has complete freedom; he is subject to all manner of pressures, many of which are from various points of view "irrational." It is nevertheless fundamental that status and role allocation and the processes of mobility from status to status are in terms of the individual as a unit and not of

solidary groups, like kinship groups, castes, village communities, etc.

There is, furthermore, an inherent hierarchical aspect to such a system. There are two fundamental functional bases of the hierarchical aspect. One is the differentiation of levels of skill and competence involved in the many different functional roles. The requirement of rare abilities on the one hand and of competence which can only be acquired by prolonged and difficult training on the other make such differentiation inherent. Secondly, organization on an ever increasing scale is a fundamental feature of such a system. Such organization naturally involves centralization and differentiation of leadership and authority; so that those who take responsibility for co-ordinating the actions of many others must have a different status in important respects from those who are essentially in the role of carrying out specifications laid down by others. From a sociological point of view, one of the fundamental problems in such a system is the way in which these basic underlying differentiations get structured into institutionalized status differentiations.

The second major context of an industrialized social system which is relevant to its stratification is that of kinship. The fundamental principle of kinship relationships is that of the solidarity of the members of the kinship unit which precludes individualistic differentiation of fortune and status in the sense in which this is fundamental to the occupational system. In other societies, extended kinship units are very prominent indeed. In our society, the size of the unit has been reduced to a relative minimum—the conjugal family of parents and immature children. Only on this basis is it compatible with our occupational system at all. Nevertheless, this minimum is fundamental to our social system and differentiations of status, except those involved in age and sex roles, cannot be tolerated within it. The same individual who has a role in the occupational system is also a member of the family unit. In the latter context, his status must be shared within broad limits by the others, irrespective of their personal competence, qualities, and deserts. The articulation of the two is possible only by virtue of the fact that in the type case only one member of a family unit, the husband or father, is in the fullest sense normally a functioning member of the occupational system. Important though this degree of segregation of the two is, for it to be complete would be functionally impossible.

Wives, by virtue of at least different qualities and achievements than those of their husbands, must in the relevant contexts share their status. This means that criteria and symbols of status relevant to the family must be extended to realms outside the sphere of the same order of functionally utilitarian considerations on which a woman's husband's

status in his occupation is based. The style of life of a family and its implication in the realm of feminine activities, however dependent it may be on a husband's income, precludes that total status should be a simple function of the "shop" concerns of a man's occupational world. Equally important, children must share the status of their parents if there is to be a family system at all. If the status of the parents is hierarchically differentiated, there will inevitably be an element of differential access to opportunity.

It is only in terms of the articulation of these two fundamentals, the instrumental complex and kinship, that I should speak of social class in a sociological sense. A class may then be defined as a plurality of kinship units which, in those respects where status in a hierarchical context is shared by their members, have approximately common status. The class status of an individual, therefore, is that which he shares with the other members in an effective kinship unit. We have a class system, therefore, only insofar as the differentiations inherent in our occupational structure, with its differential relations to the exchange system and to property, remuneration, etc., has become ramified out into a system of strata, which involve differentiations of family living based partly on income, standard of life and style of life, and, of course, differential access for the younger generation to opportunity as well as differential pressures to which they are subject. There is no doubt that everywhere that modern industrial society has existed there has been a class system in this sense. There are, however, considerable variations from one society to another, particularly between the European versions of industrial capitalism and the American.

In certain respects, the above considerations might be regarded as obvious. It has been necessary to enter into them, however, because of their bearing on the perspective in which the modern class system is seen. "Liberal" economic thought has for understandable reasons paid primary attention to the market system and therefore views the economy as a system of market-oriented units rather than concerning itself with occupational structure, most of which is internal to such units. Marxian thought shares this emphasis with the addition of the capitalist-labor division in its bearing on the market process. Neither has had much concern for the family. The importance of the difference of perspective will become evident in the analysis of class conflict which follows.

IV. *The Analysis of Class Conflict in Sociological Terms*

The above sociological analysis of social stratification is based heavily on the general view that stratification is to an important degree an integrating structure in the social system. The ordering of

relationships in this context is necessary to stability. This is necessary precisely because of the importance of potential though often latent conflicts. Therefore, the problem of class conflict may be approached in terms of an analysis of these latent conflicts and of the ways in which the institutional integration of the system does and does not succeed in developing adequate control mechanisms. The following principal aspects of the tendency to develop class conflict in our type of social system may be mentioned.

1. There is an inherently competitive aspect of our individualistic occupational system. Because it is differentiated on a prestige scale and because there is individual choice of occupation and a measure of equality of opportunity, there will inevitably be some differentiation into winners and losers. Certain psychological consequences of such situations are known. There will be certain tendencies to arrogance on the part of some winners and to resentment and to a "sour grapes" attitude on the part of some losers. The extent to which the system is institutionalized in terms of genuine standards of fair competition is the critical problem.

2. The role of organization means that there must be an important part played by discipline and authority. Discipline and authority do not exist on a grand scale without generating some resistance. Some form, therefore, of structuring in terms of an opposition of sentiments and interests between those in authority and those subject to it is endemic in such a system. The whole problem of the institutionalization of authority so as to insure its adequate acceptance where necessary and protect against its abuse is difficult—doubly so in such a complex system.

3. There does seem to be a general tendency for the strategically placed, the powerful, to exploit the weaker or less favorably placed. The ways in which such a tendency works out and in which it is controlled and counteracted are almost infinitely various in different societies and social situations. Among the many possibilities, Marxian theory of capitalistic exploitation selects what it claims to be an integrated combination of reinforcing factors, the principal components of which are the use of positions of authority within organizations (the capitalistic "boss"); the exploitation of bargaining advantage in market relations (e.g., the labor market); and the use of the power of the state to the differential advantage of certain private interests ("executive committee of the *bourgeoisie*"). In my opinion, the Marxian view of this factor needs to be broken down into such components which are certainly independently variable and related to a variety of other factors which Marx did not consider. In the face of ideology and counterideology, this is particularly difficult but it is

essential if one is to reach a basis for a scientific judgment of the Marxian doctrine of the dynamics of capitalism.

4. There seem to be inherent tendencies for those who are structurally placed at notably different points in a differentiated social structure to develop different "cultures." There will tend to be a differentiation of attitude systems, of ideologies, and of definitions of the situation to a greater or less degree around the structure of the occupational system and of the other components of the instrumental complex, such as the relation to markets and profits. The development of these differentiated cultures may readily impede communication across the lines of these groups. Under certain circumstances, this tendency to develop a hiatus may become cumulative unless counteracted by effective integrative mechanisms. A leading modern example is the opposing ideologies of business and labor groups in modern industrial society. Marx provided a beginning of analysis in this direction—but it did not go far enough.

5. It is precisely in the area of such a subculture, which is integrated with a structural status, that the problem of articulation with kinship becomes most important. The differences in the situation of people placed at different points in the occupational system and of the consequences for family income and living conditions seem to lead to a notable differentiation of family type. In American urban society, a relatively clear differentiation of this kind has been shown to exist between "middle-class" and "lower-class" groups as they are generally called in the sociological literature. These differences are apparently such as to penetrate into the deepest psychological layers of attitude determination. There are indications from our society that the family structure of the lower groups is such as to favor attitudes which positively handicap their members in competition for status in the occupational system. The role of the integration between occupation and kinship, therefore, under certain circumstances can become an important factor in pushing toward cumulative separation of classes and potential conflict between them.

6. Absolute equality of opportunity in the occupational system, which is, in a sense, the ideal type norm for such a system, is in practice impossible. There seem to be two main types of limitation.

a) Certain of these are, as noted above, inherent in the functional requirements of family solidarity. Children must share the status of their parents, and insofar as this is differentiated, the more favored groups will have differential access to opportunity. This seems to be counteracted by certain compensating mechanisms, such as leading some of the children of the upper groups into paths which positively handicap them in occupational competition. (e.g., the playboy pattern).

It may also be pointed out that a differential birth rate has a functional significance in leaving relatively more room at the top for the children of the lower groups.

b) There are important reasons to believe that the complete institutionalization of the universalistic and functionally specific standards so prominent in our occupational world is not possible in a large-scale social system. Such problems as the difficulty in establishing comparability of different lines of achievement, the lack of complete adequacy of objective standards of judgment of them, and similar things necessitate mechanisms which avoid too direct a comparison and which favor a very rough, broad scale rather than one of elaborately precise comparison. To take just one example in the academic profession, there is a wide variation of degrees of distinction between the senior members of any large university faculty. The tendency, however, is to play down these variations in favor of a broad similarity of status; for instance, as full professor, to conceal differentiations of salary within this group from public view, and to concentrate the most highly competitive elements at certain very narrowly specified points, such as the appointment to permanent rank. Considerations such as these lead to the view that there will be elements in an occupational system which run counter to the main structural type but which have the function of cushioning the impact of the latter on certain "human factors" and thus protect the stability of the system.

The fundamental problem then is how far factors such as these operate to produce deep-seated and chronic conflict between classes and how far they are counteracted by other factors in the social system such as the last mentioned. It should first, of course, be pointed out that these are not the only directions in which a structuring tending to conflict takes place. There is considerable evidence that in the modern Western World, national solidarity tends generally to take precedence over class solidarity and that, even more generally, the solidarity of ethnic groupings is of particularly crucial significance. One cannot help having the impression that in these matters Marx chose one among the possibilities rather than proving that there could be only one of crucial significance.

Furthermore, in Europe the precapitalistic residues of the old class structure in the ways in which they got tied in with the consequences of the developing industrial society have a great deal to do with the acuteness of class conflict. A good example of this is Germany with the continuing powerful position during the imperial and even the Weimar periods of the nobility and the old civil service and professional groups which were certainly not the product of the capitalistic process alone. The problem of the "threat of communism" in

Germany just before Hitler was certainly colored by their role. Class conflict certainly exists in the United States, but it is different from the German case and much less influenced than the latter by pre-capitalistic structures. Marxian theory inhibited the recognition of differences such as this—all class conflicts in a society in any sense capitalistic had to be reduced to a single pattern. Another most important set of conclusions from this type of analysis is that there must be certain elements of fundamental identity of the functional problems of social stratification and class in capitalist and socialist societies, if we have given two really fundamental elements: the large-scale organization and occupational role differentiation of industrial society and a family system. The history of Soviet Russia would seem to confirm this view. The role of the managerial and intelligentsia class, which has been progressively strengthened since the revolution, does not have a place in the Marxist utopia. In certain major respects, the role of managers and technical personnel closely resembles American society. I, for one, do not believe that there is a sharp and fundamental sociological distinction between capitalist society and all noncapitalist industrial societies. I believe that class conflict is endemic in our modern industrial type of society. I do not, however, believe that the case has been made for believing that it is the dominant feature of every such society and of its dynamic development. Its relation to other elements of tension, conflict, and dynamic change is a complex matter, about which we cannot attempt the Marxian order of generalization with certainty until our science is much further developed than it is today.

It is relevant to this set of problems that since Marx wrote, our knowledge of comparative social structures has immensely broadened and deepened. Seen in the perspective of such knowledge, the sociological emphases on the interpretation of modern Western society have shifted notably. Capitalist and socialist industrialisms tend to be seen as variants of a single fundamental type, not as drastically distinct stages in a single process of dialectic evolution. Indeed, to the modern sociologist the rigid evolutionary schema of Marxian thought appears as a strait jacket rather than a genuine source of illumination of the immensely variant facts of institutional life.

V. Conclusion

The Marxian theory of class conflict seen as a step in the development of social science rather than as a clarion call to revolution thus represents a distinct step in advance of the utilitarian background of the predominant economic thought of a century ago. Though couched in terms of a neo-Hegelian evolutionary theory of history,

it was, seen in terms of subsequent developments of social science, an advance more on the level of empirical insight and generalization from it than of the analytical treatment of dynamic factors in social process. The endless exegetical discussions of the "relations" or "conditions" of production and of what was meant or implied in them is an indication of this.

As a point of focus for the subsequent development of modern sociological theory, however, the Marxian ideas have had an important place, forming a point of departure for the formulation of many of the fundamentals of the theory of social institutions. The Marxian view of the importance of class structure has in a broad way been vindicated.

When the problem of the genesis and importance of social classes and their conflicts is approached in these modern sociological terms, however, considerable modifications of the Marxian position are necessitated. Systems of stratification in certain respects are seen to have positive functions in the stabilization of social systems. The institutionalization of motivation operates within the system of capitalistic profit making. The Marxian ideal of a classless society is in all probability utopian—above all so long as a family system is maintained but also for other reasons. The differences between capitalist and socialist societies, particularly with respect to stratification, are not as great as Marx and Engels thought.

In both types there is a variety of potential sources of class conflict centering about the structure of the productive process. Those lying within the Marxian purview are not so monolithically integrated in the process of capitalist exploitation as Marx thought, but are seen to be much more specific and in certain degrees independently variable. Some of them, like the relation to family solidarity, lay outside the Marxian focus of emphasis on the relations of production.

Insofar as Marx and Engels were true social scientists, as indeed in one principal aspect of their role they were, we justly celebrate their centennial in a scientific meeting. They promulgated ideas which were a notable advance on the general state of knowledge in the field at the time. They provided a major stimulus and definition of problems for further notable advances. They formed an indispensable link in the chain of development of social science. The fact that social science in this aspect of their field has evolved beyond the level to which they brought it is a tribute to their achievement.

THE ECONOMICS OF A CLASSLESS SOCIETY

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Significance of an opinion to the civilization containing it cannot entirely be judged either by its objective truth or logical consistency. Affinity to the emotional needs of the time must also be considered. After years of bloody war and years of democratic aspiration it is not surprising to find today an intense will-to-believe in the literal possibility of a literally classless and literally conflict-free world. Nor is it surprising, in view of the constant drive toward simplification apparently inherent in the human intellect, to find that the Communist Manifesto has an especial appeal. It offers a simple, clear diagnosis. It proposes a simple remedy. The person accepting it receives at once emotional catharsis, an explanation of almost everything, and a feeling of superiority. What more could one ask? To treat such a structure in purely intellectual terms is clearly inadequate.¹

Yet we, as social scientists, are inevitably pledged to acceptance of certain basic ideas. Whatever our concept of the metaphysical status of "objective reality," we must believe, first, that there *are* laws, or categories, or uniformities (however you choose to express it) which "explain" partially at least the functioning of our bit of the universe. Second, these uniformities or "laws" imply certain limitations—not necessarily complete but still important—and an enduring and successful civilization can be worked out only if it allows for them.² Individual men and individual cultures may, indeed, go down before seductive error. But it in turn brings with it its inherent consequences regardless of the rosy hopes which led to its adoption. And always there is the chance that by the study of truth men may see their danger in time.³ In this meeting, at least, I hope opinions can be discussed in terms of validity rather than appeal.

The Marxian class schema is one of the most potent social opinions of our time. Prima facie the communist gospel accepts nearly all of

¹ This line of argument furnishes the answer to the frequent communist sneer, "If our stuff is so wrong why do you have to keep refuting it?" Such an argument proves nothing. Social truths do not often *impose* their apprehension with the same imperative immediacy as physical laws. Each generation has to be retaught and, given similarities of emotional drives, will tend toward similar mistakes. The continual re-emergence of a continually re-refuted idea proves nothing of its validity. The phenomena indeed may more often be explained by the crisp theories of that great sociologist, P. T. Barnum.

² This does not necessarily imply an entirely closed system.

³ Thus Shakespeare in *All's Well That Ends Well*:

"Oft expectation fails and most oft there
Where most it promises; and oft it hits
Where hope is coldest, and despair most fits."

our highest values, and its relation to the ideals of the eighteenth century *illuminati* is obvious. Men are naturally "good" and naturally "equal." Evil and inequality spring alike from a "bad" environment. If, with the aid of "science" we create a "good" environment, men will become "good," and so on. It remains only to add the Marxian concept that there are but two important social classes and that class antagonism and class "exploitations" are the root of all evil, to be led inevitably to the prescription of the dictatorship of the proletariat, the abolition of private property, and, in final climax, the withering away of the state when "in place of the old bourgeois society with its class antagonisms we shall have an association in which the free development of each is the free development of all."⁴

Space is lacking for a minute dissection of Marxian exegesis. The structure of the Manifesto may, of course, be softened down and "interpreted." Thus I have known some apologists to imply that all that is meant by the withering away of the state is that "everyone accepts the necessity of planning." Such interpretations vibrate between tautology and nonsense. The myth which Marx taught and Lenin elaborated, the myth which has fired the minds of thousands of intellectuals, has been one of an eventual *literal* anarchy, obtained through a present strict control—the idea that *all*, or virtually all, economic (and social) conflict stems from the struggle of bourgeois and proletarian.⁵ We shall examine the psychological inadequacies of this opinion, and we shall show both its close connection with comparable defects in other elements of nineteenth century thought and the way in which such ideas, taken together, have led to quite dangerous misunderstandings of the social process—not only in some of the most radical and eccentric modern quarters, but also in some of the most respectable.

I

Dr. Lewis Lorwin, in summarizing the community doctrine of the class struggle, speaks of a social class as being to the communist "an aggregate of persons who have the same *function* in the productive process and who therefore have the same *source* of income."⁶ (Italics added.) While the actual words are Lorwin's, the definition quoted embodies an important and interesting ambiguity in the general Marxian outlook and also in much modern economics. The ambiguity is a confusion of the nature of productive function, or income source, with the manner in which money is paid. In other words, whether a

⁴ *The Communist Manifesto*. End of Section II.

⁵ See the quotations from Lenin and Marx in the remainder of this paper.

⁶ *Encyclopaedia of the Social Sciences*, Vol. III, p. 540.

man is a coal miner or an oil driller, whether he be a simple worker, a foreman, or a vice-president, he is impliedly treated as having both the same function and the same income source simply because he receives wages rather than rents or dividends. I submit that this thesis overlooks the possibility of conflict in two directions: (1) "vertical" conflicts between industrial groups rather than the simple Marxian "horizontal" classification of all "owners" against all "workers"; (2) conflicts of interest between industrial groups and those who nominally represent them; i.e., the rank and file and the leaders. Once these two forms of conflict are thoroughly appreciated, the Marxian schema loses most of its appeal.

Vertical conflicts between group and group have received considerable attention from economists; for example, Professor Lionel Robbins in his "Economic Basis of Class Conflict." In the liberal-left mythology, however, the problem is usually only recognized as occurring in capitalist context between owner and owner. The radical finds relatively little difficulty in seeing that under capitalism the owners of the oil industry (i.e., of its capital) may be in conflict with the owners of the coal industry, for each group produces substitute products and the wealth of one inevitably implies some diminution of, at the least, the potential wealth of the other. But it may be plausibly maintained that if all capital were owned by the state the obsolescence of individual units would be a matter of small consequence, and resources would be allocated without serious conflict, and in the best interest of all. There would be no "vested interest."

A good example of such an outlook is furnished by Dr. E. D. Domar's essay on "Investment, Losses, and Monopolies." He writes:

We may imagine representatives of our big business, perhaps together with those from big labor, sitting around a table. All prospective investments are placed on a platter and passed around. The representative of General Motors might, for example, find all of them splendid, all with the exception of Kaiser-Frazer's new plan for expansion. He takes this one project off and passes the platter on. Pennsylvania Railroad has no objection to Kaiser-Frazer and to all other such projects, but it might decide to veto the St. Lawrence Waterway. Its views are seconded by United Mine Workers whose behavior is undistinguishable from that of their business associates at the table. The platter moves on. . . . By the time the platter completes its trip around the table it is perfectly empty; all projects have been vetoed by one or the other participant. And there goes our prosperity.

If the participants were small and weak, as they are supposed to be in an atomistic society, their vetoes would be just empty talk. On the other hand, *if the whole economy were ruled by one closely connected financial group*, the latter would not treat the level of income as independent of its own actions, and would find it profitable to invest and expand in many different directions. . . . It would even pay the rest to compensate a particularly injured member for his losses in order to remove his opposition.⁷ (Italics added.)

⁷From *Income, Employment and Public Policy: Essays in Honor of Alvin Hansen* (New York: W. W. Norton and Co., 1948), p. 52. Dr. Domar's implication that since the "level of income" might be maintained, all will be well, exemplifies one of the outstanding weaknesses of neo-Keynesian thought. He seems to confuse full employment with welfare. But income, merely as such, could be maintained by erecting statues of Adolf Hitler at

The first thing which will strike an unbiased reader about this passage is the apparent assumption that private businesses really do get together in this way. Dr. Domar does not seem to realize that what he is really aiming at is a session of a government planning board or NIRA. But, leaving that to one side, the basic fallacy of the passage quoted and of the Marxian and modern liberal outlook, alike, is the idea that planning will avoid pressure group conflicts. "From the time," wrote Marx, "when together with class domination and the struggle for individual existence, *resulting from the present anarchy in production*, those conflicts and excesses which arise from this struggle will all disappear . . . there will . . . be no need for the state."⁸ (Italics added.) Evaluation of this statement implies the essence of our argument. I submit that the fundamental weakness of the Marxian and modern ultraliberal analysis, alike, is its naïve psychological view of man as a consuming machine. This error, furthermore, is no more than the logical corollary of one of the most respectable ideas of nineteenth century thought—the utility calculus.

Under the nineteenth century ideology men were looked upon as balancing a certain amount of work (disutility) against a certain amount of enjoyment or leisure or consumption (utility). Work therefore was conceived of as drudgery and the aim of progress was to enable us to do as little of it as possible. The whole creative instinct of the human race was slurred over. In a healthy society, however, work is not to be thus sharply set off against enjoyment. True that particular satisfaction called work may be subject, like others, to a law of diminishing marginal utility, and we may have to supplement the pure instinct of workmanship to get as much work out of a man as we wish, but this is not ground for making the sharp division between labor and consumption usual in economic and Marxian thinking. Work is still frequently one of a man's satisfactions.

Yet from the recognition of this fact we soon see the possibility of conflicts even in an equalitarian communist state. It is not simply a matter of friendly dispute between impartial scientists as to the best way to do things. The problem cuts much deeper. It is all very well for Lenin to say that in the Marxist utopia "the authority of the government over persons will be replaced by the administration of things and the direction of the processes of production."⁹ One cannot

every crossroad. And though that particular form of conspicuous waste is unlikely, the most cursory reading of Veblen will show why even an aggregation of planners might want to find some similar means of wasteful outlay to escape disturbing their vocational vested interest. To be sure the activity of carving mustaches might be preferred by the people to more food. But we could not settle this question by reference to income levels alone.

⁸ Quoted by Lenin in *The State and Revolution* (New York: Vanguard Press, 1929), p. 124.

⁹ Lenin, *op. cit.*, p. 124.

direct and (more important) redirect the processes of production without directing people.

Whether we could all of us be trained to do, and like to do, anything and everything, if we started soon enough, is a point which need not be debated at this point. It is sufficient to realize that by the time a man reaches thirty-five he is likely to have committed himself, occupationally and emotionally, to a given line of work—often to a given community, and so on. Not merely the size of his income but his joy of effort is likely to be related to the social demand for his skills. It follows that, when men are thus emotionally committed to regions and occupations, they also become committed to a certain pattern of resource use. And when that pattern is threatened everyone so dependent on it—be he “capitalist” or “worker”—will have some vested interest in resisting change.¹⁰

Yet we must remember that without technological change, income cannot keep rising. The Communist Manifesto implies as much. “Constant revolutionizing of production, uninterrupted disturbance of all social condition, everlasting uncertainty and agitation distinguish the bourgeois epoch from all earlier ones.”¹¹ The result is that a nation which desires a rising standard of living must be a nation in which there are constant *vertical* group (class) economic conflicts.

The Marxist is caught in a curious dilemma. If he argues that men in modern industry have all become interchangeable parts and therefore will not care what they are doing and hence will not form pressure groups, he is admitting that the instinct of workmanship is going to be frustrated in his society. Furthermore, practically speaking, the interchangeable-part idea will not be true of the higher rank scientists and planners. On the other hand, if he admits the existence of the instinct of workmanship, he must admit the existence of potential class (group) conflict in the socialist state. Many an erstwhile happy man could be left stranded as a “back number” and no money salve is ever likely entirely to relieve his hurt.

From the highest and noblest motives as well as from the most base, the scientist who wishes to introduce a new pattern, involving new resource allocations, will be involved in conflict. The “free development” of the man who wishes to continue in an obsolete industry

¹⁰ The failure to see difficulties of this sort explains the pathetic and sometimes ludicrous bewilderment of the modern urban “liberal” in dealing with industrial disputes and agricultural problems. Why do the unions fight each other if they are all “workers”? Why is it so difficult to deal with the present-day United States in terms of Dr. Lorwin’s concept of an “alliance of poor peasant masses and industrial workers against a financial oligarchy”? “Peasants” and industrial workers seem to be at least equally concerned with fighting each other. Mr. Joseph Rosenfarb, in *Freedom and the Administrative State* (New York: Harper & Brothers, 1948, p. 105), felicitously refers to “interleadership conflicts.” By a parity of reasoning there would be inter-rank-and-file ones too.

¹¹ *Communist Manifesto*, Part I.

can never be the free development of all—and this not from money or even from selfish reasons but because of a conflict, if you will, in artistic drives. Those UNESCO “scientists” who wished to avoid conflict by giving every man a chance for “personal growth and development” have failed to realize that one man’s growth may involve another’s insecurity.¹²

II

From the foregoing we see the inadequacy of the Marxian schema where change and resulting conflict of vertical groups are concerned. But consideration of men’s satisfaction in work leads to another and equally important source of potential conflict—the diverging interests of representatives and represented. Marxian literature contains considerable references to “primitive democracy,” or rule by the whole people. This is another nineteenth century delusion. In practice it must mean rule by representatives of the people. For Lenin’s references to “the discharge of *all* the functions of government by the majority of the population and by every individual of the population,”¹³ is simply a physical impossibility for large nations—say the U.S.A. and the U.S.S.R. Merely as a matter of mechanics, representatives must be selected and the most that the proletariat, as such, can do will be to exercise a veto power or to choose among alternatives presented to it by various individuals and groups. But this also may involve a form of conflict!

Our argument so far has run too much in terms of dynamic growth. It may be objected that if only we decide to have a stationary state, plus socialization of the means of production, administration and conflict will alike disappear. But even here, though both may be undoubtedly reduced, their likelihood still survives.

A vital point will be the degree of centralization and of technological interdependence involved. In the nonmechanical, purely rural, stationary state there would not, indeed, need to be much government. If men were moral (and hence no need to repel invasion), a mere loose occasional co-operation would suffice, and surviving conflicts would be within the home. But in the highly industrialized machine state (and the Marxists, and most socialists, emphatically wish to retain the machine) the technological dependence of individuals upon one another will be matched by the need of a politico-economic hierarchy to operate the machine. Lenin’s naïve statement in *The State and Revolution* that “the great majority of the functions of the ‘old state’ have become enormously simplified and reduced in practice to

¹² Report of the UNESCO committee of “social scientists” on the causes of war. *Christian Science Monitor*, August 28, 1948.

¹³ Lenin, *op. cit.*, p. 150.

very simple operations such as registration, filing, and checking,"¹⁴ would not have been made after he had begun the great Soviet experiment, and encountered firsthand the immense technological complexity of modern society.

Because of this complexity, even a static modern industrialism will require the careful and prolonged training of highly skilled men and the *selection* of the best of them for responsible position. But this involves administration and potential conflict. For we must first inculcate the desire to want to do a good job for the state, i.e., ambition (however noble), and then we must make a selection—which involves thwarting some of these ambitions. The best that can be hoped for in such a society is the reconciliation of men to "legitimate" disappointment. Absolute abolition of disappointment is impossible.

Thus we must conclude that even if the industrialized state is stationary the proletariat cannot ever dictate. It is at best certain proletarians who do the dictating. In the same way the rank and file of a union or other electoral body, though also retaining some residual veto, does not bargain directly. Certain representatives bargain. But the naïve left-wing idea of a universal identity of interest between bargainers and those in whose name they bargain can scarcely be justified. Representative institutions tend to take on a life of their own, developing in greater or less degree at the expense of the parent body. Few would be so innocent as to suppose that the economic interests of a lawyer and his client were always the same—or a doctor and his patient.

But in the same way a labor leader may be (not of course always) not merely the passive "voice" of the union but an individual making a career of strife. And he may be more interested in preserving and increasing the prestige and power which come to him through strife than in genuinely increasing the real income of those he represents. Analysis in terms of "purely economic" motives is quite inadequate. The desire for fame or power may be quite as potent a source of devotion as any mere love of money.

Yet, still more important, real understanding is never attained if we think of divergences between representatives and represented as rooted only in directly egotistical or venal motives. Far from it. The desire to do what one thinks "good" for or to people—whether they want it done to them or not—is one of the most common and most irritating attributes of generous and high-minded individuals in all societies. Compassionate, soft-hearted ascetics have burnt thousands of heretics at the stake. One of the most dangerous of philosophic quibbles, if literally applied, is to argue that the truly free man is

¹⁴ Lenin, *op. cit.*, p. 150.

only he who is allowed to do only what is right. Such an attitude is the open door to tyranny. The right to make a fool of oneself is one of the most precious aspects of democracy. That is what we mean by the "pursuit of happiness."

To sum up, the Communist Party is *not* the masses or the proletariat. At best it is a group of men trying to act according to *their own ideas* of what is best for the masses or the proletariat, and at worst it is a group acting to preserve its own power. Furthermore, since it is a self-selecting group it is apt to be a one-formula group—increasingly rigid, conformist, and unadaptable—more and more swallowed up by its own preconceptions. As Mr. Joseph Rosenfarb puts it: "Vanity in the leader and sycophancy in the followers tend to eliminate from the circle of the mighty those who tend to disagree with the voice of authority . . . dictators are likely to receive only information which is in line with the fundamental policies of their system."¹⁵

III

It will, however, be objected that we are assuming a "fixed amount of evil" in human nature, but that in fact human nature is pliable. Men may be taught, it is said, to become moral and they may be bred and taught so as to produce equal intelligence. Perhaps so. But does the inauguration of either centralized planning or the dictatorship of the proletariat in itself do anything to eliminate selfishness (of however noble a sort) or stupidity?

The communist-socialist-planning doctrine on this point has a good many versions. First of all it may be argued that working for the "social good" rather than "personal advancement" will eliminate egotism and rivalry. This, however, does not follow. As I have said elsewhere, "suppose one psychologist thinks he has a better method of teaching absence-of-self-assertion than another. Must he not at least have enough assertion left to assert better methods of teaching non-assertion? But is it right to show up the other fellow?"

Another, and very plausible, argument runs as follows: Selfishness may still remain but there will be no need to use it. By "librating production from its bourgeois shackles" men will have more than they want of everything; there will be no economic goods and no occasion to display selfishness, for there will be nothing to be selfish about. Two answers may be made to this: First, the wants of a free people are often thought of as "boundless." However much the standard of living may rise, most men, after an interval, will want more. Secondly, there can never be enough power, prestige, fame, or love

¹⁵ Joseph Rosenfarb, *op. cit.*, p. 119.

of particular women to go around among the people who want them. But since, even if one disagrees with the first answer, the second remains: changing social systems will not in itself change selfishness. It will only emphasize different things to be selfish about. And the potentiality of ugly conduct inheres as much in the mere fact of rivalry as its nominal goal.¹⁶

Perhaps the best way to point up the sematic issue is to drop the loaded word "conflict" and substitute "disagreement." Almost everyone would admit that a "disagreement-free" world is impossible—especially if there is change and discovery. But when do "disagreements" become overt conflicts? The socialist would say when there is a clash of money interests. But this is only a small part of the answer. Disagreements can also become conflicts when the noblest and most generous of men are disagreed as to the best way of doing things—and the more nobly convinced they are of their duty to serve humanity the more they may fight!

IV

It is time to draw together the threads of our argument. What is the outlook for a classless state? Clearly the literally classless and conflict-free state is impossible. Two lines of procedure remain. The first is to try to eliminate overt conflict by substituting frustration and routine. This, following Whitehead and Toynbee, I shall call the pseudo-solution. What does it imply in concrete economic terms? We may summarize the necessary conditions as follows.

The (almost) conflict-free state must first of all be stationary in technique and in population. Next, the level of technique at which the economy is stabilized must be so low that pretty much everyone could fill any office. Next, selection of rulers must be made by objective criteria largely independent of training: for example, simple rotation, seniority, casting lots of divine or hereditary right. Finally free inquiry must be suppressed and everyone rigidly conditioned to the acceptance of that standard of living, technique, and place in life "to which it has pleased God to call him." Perhaps, if the conditioning were done well enough, the state might largely disappear and coercion and conflict survive only in the rigid training of children by their parents. This is the nearest we can come to a literally conflict-free world. And as far as I am concerned you are welcome to it.

But there is a second choice. If we decide, instead, to create a

¹⁶ In other words, the introduction of socialism of whatever sort and the ideal of working for the common good do not remove the occasion for selfishness. Still there remains the eternal ethical problem of the man who asks, "Why should I work for the common good?" or "Why should I let the other fellow's idea prevail over mine?"

society in which men really do have a chance to "grow and develop personally" and to express their instincts of workmanship, then we will stop talking of an absolute absence of conflict and absolute security. We will begin to look, instead, for a myth which will reconcile men to "legitimate" disappointment and insecurity, and which will thus enable us to move "from force to persuasion." If we want continued technological and artistic growth, we must find means of providing not merely for the obsolescence of skills but also for the obsolescence of the power connected with those skills. In other words, we must set up a code of emulation and selection; and, since all men are not likely to abide by this code, we must establish, as well, some "particular power of suppression" to enforce it in the cases when persuasion breaks down.

Of the available codes the one which, theoretically at least, involves the greatest elasticity is competitive private property. This of course does not mean one hundred per cent laissez faire. Nevertheless the competitive market is almost the only form of economic organization which has "built in" to it the means of disposing of obsolete skills. Private property in such a market is conceived of as constantly destroying itself in the particular instance in order to survive in the general. There is thus an arrangement for disposing both of obsolete skills and obsolete power without upsetting the whole social fabric. But guild socialism, for example, makes little provision for an obsolete union, and the problems of democracy and of technical change alike are not solved by substituting one group of oligarchs for another. Only if we provide for constant infiltration from below, on independent terms, do we meet the dilemma.

Thus we conclude as follows: We cannot wholly destroy classes or conflicts; we can only minimize them by keeping the doors of opportunity as wide as possible. Though this often involves the limitation of state action, it nevertheless cannot involve pure anarchy. Perhaps capitalism is no longer the best way of maintaining a fluid society, but certainly no acceptable alternative will be found as long as we do not even recognize the existence of the problem and envision it as the mere substitution of one group for another. Thus we see that though Lenin was thinking only of a species of Rousseau-like anarchy, he nevertheless wrote a profound truth in saying that "democracy will also disappear when the state disappears"¹⁷—for the state will disappear only when the potentialities of conflict disappear, and the potentiality of conflict will disappear, if then, only when democratic freedom of expression and of creation disappear with it.

¹⁷ Lenin, *op. cit.*, p. 126.

DISCUSSION

JOHN W. McCONNELL: Both of these papers have been thoughtfully prepared and stimulating to those with an interest in the way society is organized and the processes by which social change takes place. Both acknowledge a great indebtedness to Karl Marx and Frederick Engels for directing the thinking and research of social scientists to the importance of class in the structure of society, but each has seen fit in his own way to criticize and develop more fully the analysis of Marx. This is the spirit of scientific inquiry, and the presence here of this spirit is probably the most valuable single difference between our society and those founded on the principles of Marxism.

May I comment directly on each of the papers. Professor Parsons' paper is essentially an inquiry into the objective characteristics of class as a present-day phenomenon in American society. It is not an inquiry into what Marx really meant by "class." Marx never clarified his own concept and we owe to Engels, for the most part, the very few explanatory remarks concerning the nature of class in early socialist literature. The term has served the purpose of a rallying cry, a call to action, but it is anything but a precise scientific term. For this reason, Professor Parsons' paper is of great interest, because, in the form of hypotheses, it points the way by which research may seek to determine the existence and examine the nature of classes in contemporary society.

Briefly, Professor Parsons suggests that classes are based primarily on occupational differences; i.e., the function one performs in the productive process and the relationships established by that function which create differences in status between individuals.¹ Since the family is the unit of social transmission in our society, the differences derived from the occupation of the chief breadwinner establish the status of the family and influence the attitudes and behavior of children. It is acknowledged that conflict exists between occupational groups, but it is likewise emphasized that these functional groups are also the integrating elements of the social structure and that co-operation between them is as fundamental a characteristic as conflict. This is an observation which seems to me to need constant reiteration, for conflicts tend to grab the headlines while the quiet work of day-to-day co-operation in our economy goes unnoticed.

Finally, Professor Parsons points out (1) that functional differences or class differences are not unique with a capitalistic economy, but are inherent in any complex industrial society organized under whatever form of economic or political ideology, and (2) that so far as American society is concerned, class antagonism does not exist in any pure form, but is complicated by the convergence of ethnic differences and other forms of group tension. In studies of class alignment made by this author some years ago, it was found

¹ For a detailed examination of the relationship of occupation to class alignment in an American city, cf.: *The Evolution of Social Classes*, by John W. McConnell (Washington, 1942), and *The Social System of the Modern Factory*, by W. L. Warner and J. O. Low (New Haven, 1947).

that some occupational groups tended to be dominated by persons of a similar national origin, as for example Italians in unskilled and semiskilled factory jobs, or the Irish in various levels of supervision. It was found that the tension between line workers and supervisors was increased and re-enforced by cultural differences and antagonisms rooted in nationality differences.

Research in recent years supports Professor Parsons' hypotheses. His presentation would have been stronger had he buttressed his remarks by references to the very substantial discoveries by researchers in the fields of human relations in industry or industrial sociology. These are for the most part firsthand studies of the social systems of the modern business enterprise and of the community built around the plant or place of business. We have been aware of the "long arm of the job," to use a phrase coined by the Lynds in *Middletown* to identify the influence of the conditions of employment on the total life of the workman and his family, but the concrete details of this phenomenon have now been described more completely by E. W. Bakke in his *Mutual Survival and Theory of Adaptive Human Behavior*, by William F. Whyte in *Human Relations in the Restaurant Industry*, and by Lloyd Warner and J. O. Low in their book *The Social System of a Modern Factory*, to mention only a few. To be sure these studies do not reveal the existence of classes in the Marxian sense of a propertyless proletariat, the capitalist, and landlord, but they do describe in detail and more precisely than Marx ever attempted the kind of horizontal strata which constitute American society today.

In spite of the present research, certain fundamental questions are still unanswered. Does the occupation one follows provide him with patterns of thought and action, a place in the community, political rights and duties, a set of religious beliefs and practices, and determine whom he shall marry and where he shall live, who his wife's friends are and what occupation his children will follow? Does the function a man performs in the productive processes of his society create in his children a specific attitude toward life and, as Professor Parsons implies, condition in a significant way his adjustment to the competitive process of getting a living? Does a junior executive in a company spend his money differently, think differently about the company and his boss, have a different attitude toward the functions of government than does the lathe tender or toolroom attendant because his occupation is different, or is there some other explanation? These are questions which can only be answered by painstaking research, but the answers when obtained would go a long way to providing the insights and understandings so necessary these days in economics and politics.

Although it may be too obvious to require comment, it is important to bear in mind that there is a fundamental difference between the existence of a class as an element of the structure of society and the phenomenon of class consciousness. The latter is essentially a realization on the part of the people of similar occupation and social status that they have common interests, attitudes, traditions, loyalties, and symbols, and that they stand in a position of antagonism to other occupational and status groups. This kind of class consciousness is seldom found in the United States. Research has shown that

the American workingman readily identifies himself as a member of the "working class" but means by that a class which includes everyone who works for a living; and antagonism to the "boss," where it exists, is highly personalized and crops out only as mutuality of interest collapses occasionally before a specific point of conflict. One needs to be reminded, however, that tendencies toward the sharpening of class differences in the United States are becoming increasingly apparent. Election statistics show a progressive disintegration of regional loyalties in favor of groupings around the economic interests functional groups. The unbelievable popularity of the Roosevelt-Truman program of social welfare legislation is one bit of evidence. Another is the tendency of protective legislation to establish income or occupational groups with special privileges and prerogatives, as for example in the Fair Labor Standards Act, the National Labor Relations Act, and the Social Security Act. Finally, the sweeping gains of organized labor in the past decade, torn by internal conflicts as the labor movement may be, nevertheless gives organizational form to the common interests of workmen which are essentially rooted in their economic function and status.

Professor Wright's paper, with the misleading title of "The Economics of a Classless Society," attempts to show that Marx's prophecy of a conflictless, classless society is without foundation. Marx was wrong, in Professor Wright's opinion, because (1) Marx did not realize that the interests of men were much wider than their purely economic interests and that these interests would promote resistance to economic changes and hence conflict, not on class or horizontal lines, but along industrial or vertical lines, or, he might have added, along regional lines; and because (2) a highly industrialized society of necessity requires a hierarchy of authority and a representative type of government, both of which establish differences of interest between the rulers and the ruled, between the representing and those they represent. America's brief industrial history—and possibly Russia's as well—gives all the proof necessary to the contention that industrialization produces a greater subdivision of function in the economic structure than the oversimplified picture of the capitalist and the proletariat ascribed by Marx to a capitalistic economy.

Although the general theme of Professor Wright's paper can be readily accepted, several questions are raised by the loose, speculative, and somewhat prejudicial nature of his remarks. One might ask whether Marx really did believe in a society without conflict of any kind; or was he so concerned with the economic basis of existence that he did not give much thought to potential conflict in the noneconomic levels of living—in science, art, and intellectual pursuits. Marx was interested in freeing man from economic insecurity and exploitation, but is there evidence that he believed that all conflict would disappear? Marx's contention that the state, as an instrument of suppression, would ultimately wither away blinded him to the possibility of mounting political conflict as state ownership and operation increased. It seems clear, however, that he believed that the principle of the dialectic which would bring about the socialistic state would continue to operate in the noneconomic aspects of social relationships.

Professor Wright is critical of Marx's acceptance of the crude and unverified

theories of human motivation adopted by the classical economists. We have long since discovered that man responds to a much wider range of incentives than the economic. One might seriously question the validity of Veblen's theories of human behavior, which Professor Wright apparently offers as a substitute for the outmoded doctrines of Ricardo and Nassau Senior. Veblen's service to economics was his forceful criticism of the assumptions of the classical economists but the "instinct of workmanship" would hardly stand the test of verifiable psychological knowledge today.

Finally, Professor Wright's endorsement of a competitive private property economy as the one which provides both for technological change and the relatively unhampered opportunity for the mobility of the individual is both vague and somewhat complacent. He says he does not mean "100 per cent laissez faire," and he speaks of the "limitation of state action" and "not pure anarchy"; but at no point does he identify the amount of state action which is necessary or desirable to produce the flexibility he desires. More important, it seems to me, is the failure of the paper to recognize that the amount of state interference in the economic life of the nation is related to the complexity and the rapidity of change of our industrial society, and that the dynamic nature of our society requires the constant adjustment of social institutions to ever changing conditions. The necessity of experiment and change is the price of survival. We do not move in the realm of fixed points—neither toward the utopia of Karl Marx, nor toward some optimum mixture of state regulation and free enterprise. The most enlightening characterization of our society is that of dynamic equilibrium in which the whole is rushing onward at a rapid rate, while within there is a continuous shifting of relative positions and weights in order to maintain a working organization. No preconceptions as to relative weights and relationships are possible since these are determined to a large extent by factors governing the speed and direction of the movement of the mass. Professor Wright's paper does not acknowledge the importance of this process of social adjustment.

M. M. BOBER: Man cannot get along without his fellow men, nor can he get along with them. Throughout the ages thinkers found in this unpleasant truth the distressing problem of organized society, and they sought measures and social constructions which would mitigate the difficulty. Painfully impressed by man's aggressions against man, Marx looked at this problem from a narrow angle and was convinced that the solution was not only available but that history was inevitably paving the way to it. His theory of society presents the formula that all human strife finds its locus of infection in class exploitation, that definite classes grow out of specific modes of production and the associated property relations, and that the communist order—the masterpiece of human evolution—will abolish alike private property and all classes and all strife. A faulty diagnosis produced an inadequate prescription.

That Marx's cure is precarious the two excellent papers forcefully demonstrate, Dr. Parsons' indirectly and Dr. Wright's directly. Dr. Parsons' penetrating account of modern views of social stratification suggests that the

division of a population into divergent groups with conflicting interests, far from presenting itself as a simple phenomenon bred by the economic factor alone, is a complex occurrence for which a variety of circumstances are responsible. There is little reason to believe that all these circumstances will vanish with the appearance of communism.

In his stimulating critique of Marx's attitude to this problem Dr. Wright calls attention, with good reason, to two categories of conflict which bid fair to plague a communist society—conflicts between what he terms vertical groups and conflicts between the leaders and the rank and file. I should like to suggest two ideas, seemingly integral to Marx's formulations, which, if carried into practice in his classless society, would be productive of these two types of conflicts.

First, we recall Marx's guiding rule for the distribution of income in the second, genuine phase of communism which arrives after the first phase, known as socialism: "From each according to his capacity, to each according to his needs." It would scarcely be stretching a point to assert that the millions who contribute much to the social income but are classified as agents whose needs are limited will not be satisfied with the verdict of the planners, and, in addition, will harbor animosities toward those who are privileged to greater claims on the social dividend, especially if the productive contributions of the favored ones are not commensurate with their rewards. There may develop less dissatisfaction if the criterion of needs rests on such a simple index as the size of the family. But it is reasonable to believe that Pandora's box will burst wide open if the imperative prevails that top political officials enjoy needs superior to those of, say, artists and scientists, that these latter are entitled to greater satisfactions than factory managers, and so on through the many types of occupations in modern society, and without regard to what we would call the value of the marginal product. The stratification, moreover, of people by the assigned gradations of needs and enjoyments may, in the context of the mores and standards in the new society, acquire an emotional significance and scale of values which would generate stresses and discontents as disruptive as the discords in societies on which Marx pours his scorn. A new élite may arise, and Veblen could add a new chapter to his *Theory of the Leisure Class*.

Second, in common with Adam Smith—who, however, saw the brighter side, too—Marx and his friend Engels considered division of labor as stultifying and degrading. They seemingly aim to have little of it in their favorite society. In a joint work in 1845 the two young revolutionaries irresponsibly declare that under communism the worker will hunt in the morning, fish in the afternoon, rear cattle in the evening, and criticize after dinner.¹ In the first volume of *Capital*, Marx affirms that modern industry imposes the necessity of varying the work of the laborer "to give free scope to his own natural and acquired powers."² A few years before Marx's death, Engels writes in

¹ *Die Deutsche Ideologie*, in *Marx-Engels, Historisch-kritische Gesamtausgabe* (Berlin, 1927-1932), Part I, Vol. 5, p. 22.

² *Capital*, Vol. I (Chicago: Kerr, 1909), p. 534.

Anti-Dühring, the manuscript of which was read to Marx before publication, that during working hours each person will develop his physical and mental capacities, and that to permit division of labor between the porter and the architect is to perpetuate the capitalistic crippling of humanity.³ One wonders how far they meant to carry the obliteration of division of labor and how versatile they intended to make each individual. As if in anticipation of Dr. Wright's argument that the laborer will resent a change in his daily work induced by technological innovations, Marx expresses himself in favor of educating the worker into a "fully developed individual fit for a variety of labors, ready to face any change of production."⁴

It is obvious that the enormous effort entailed in training millions upon millions of workers to perform varieties of tasks in physical and intellectual areas, as well as the periodic shifts of such masses of people from task to task and from place to place, with the necessary apparatus of supervision, statistical records, and management controls, will involve an immense hierarchy of officials and an extravagant array of rules and regulations, especially in view of the fact that, to prevent the stunting of their own personalities, the officials will devote part of their hours to the duties of porters and architects and the pleasures of hunting and criticizing. The state can hardly wither away when such complexities are added to the familiar complexities of modern social organization and to the uncertain complexities constantly introduced by modern science and technology in a dynamic society. And where the state instruments steadily intrude into the daily lives of the millions of workers, conflicts between the leaders and the led cannot be wished away. Also, if people are classified, as they are bound to be, by the clusters of jobs assigned to them for the development of their potentialities, group cleavages are apt to form, and Dr. Wright's vertical dissensions may breed in abundance.

It may be important to add here that there is in the minds of scholars the question whether planning and freedom are compatible, whether a society which substitutes the equations of planning boards for the more or less free choices of consumers, entrepreneurs, and the owners of land, labor-power and capital can in the long run maintain the traditional democratic freedoms. This question has aroused controversy of late and is not easily resolved. If planning is incongruous with freedom, the notion that in a communist order strife will disappear merits little credit, unless indeed the discussion is foreclosed with the remark that there will be no conflict because the monolithic state will forbid it. It is to be regretted that Dr. Wright, with his fund of wisdom on such questions, does not touch on this problem. It would have been interesting to hear his travelog on "The Road to Serfdom."

To all such observations the Marxian is likely to object that they are derived from the conception of the human being as he exhibited himself in the imperfect societies with modes of production associated with private property and are accordingly irrelevant as predictions of human reactions in the new society ruled by the environment of communal production.

³ *Anti-Dühring* (New York, 1939), pp. 221-222, 320-324.

⁴ *Capital*, Vol. I, p. 534.

This objection is based on the narrow theory that human conduct is determined primarily by the productive system and its institutional implications and that different modes of production raise different human beings. To Marx, history is a continual transformation of human nature. However, even the exponent of the plastic view of human character must recognize the fact that in many essentials human nature displays striking similarities over time and space. One cannot help being impressed by the fact that we in the days of the atom bomb can read with understanding and enrichment, even with a sense of kinship, works as varied in cultural background and as apart spatially and temporally as Confucius, the *Bible*, Greek drama, Shakespeare, Voltaire, and Tolstoy's *War and Peace*. Nor can we turn our backs on the sad truth that through all historical societies of considerable size, and often of minor size, too, there runs the common denominator of discord and strife. A communist society will be different, of course, but hardly so different as to give us a race of new men with a radically different behavior.

In a communist order we deal with people, by and large, of familiar attributes—the desire to be somebody, the search for personal gain, power and prestige, and the usual inclination toward imitation, fears, and irrationality. Such people will live in surroundings which, apart from property institutions and religion, bear substantial resemblance to the surroundings of other societies: there is the old need to get one's bread by labor, the old necessity to live within groups, to co-operate and to submit to social restraints; and there is the perennial framework of inequality of talents, of achievements, and of the capacity to maneuver for advantage. It may be too soon to draw on the experience in Russia, but the fact cannot be set down as negligible that today, three decades after the beginning of the Bolshevik revolution, the visitor who breaks through the Iron Curtain fails to return with the report that the Soviet people are sprouting wings and that Walter Bagehot's age of discussion has dawned on that land. In short, as Dr. Wright points out so well, with all allowance for the transforming character of a communist regime, it seems unreasonable to expect that in this new society human beings will be so perfect as to live in brotherhood despite divisive stimuli in the social setting; or else, that the environment will be so ideal that human failings will find no way of expressing themselves.

One final remark. Dr. Wright seems to put stress on the instinct of workmanship as inducing alike an emotional attachment of the worker to his specific job and an antagonism to scientists and planners who force changes in it. One may observe, first, that in common with some of the other kinds of instincts often enumerated in social studies, principally of older vintage, the instinct of workmanship is a doubtful concept; and even if it does exist, it rarely finds exemplification in modern society with its detailed division of labor. Second, it is hardly necessary to import this concept to sustain Dr. Wright's thesis of the laborer's opposition to innovators. Among the conclusions of many a student of the labor problem some prominence is given to the proposition that the worker grows to treat his job as his personal property and that he endows it with the attributes of a vested interest, so that jurisdictional disputes and some of the other labor troubles find at least

a partial explanation in this basic attitude. The worker will accordingly resent a violation of this property he considers uniquely his own. But more important than this consideration is the fact that workers, like other humans, are creatures of habit. A given job stamps the worker with a definite routine of behavior, with a well-worn path of connections with matter and men. It stands for deeply etched habits of movement, manipulation, and thought. A change in the job snarls up established grooves, introducing the discomforts of novelty and uncertainty. If the instinct of workmanship were alone concerned here, the attachment to one job could be transferred to another job, with a new challenge to one's curiosity and with fresh and inviting ways for the instinct to find its exercise. Breaking the cake of custom is painful to many people, and it may be submitted that this circumstance, more than the instinct of workmanship, may become the incubator of vertical discord in a dynamic communist society.

In closing, I should like to register a modicum of pain over the strain on my own habits occasioned by the disparity between the title of Dr. Wright's paper and its content. By the economics of a classless society, or any other society, I believe that most of us are in the habit of understanding an examination of the allocation of resources for the maximization of a given end—ordinarily consumer satisfactions. The title suggests the field of controversy in which von Mises stands at one extreme, Lange, Lerner, and others at the other extreme, and Hayek has evidently moved from the first extreme toward the middle. All this is no doubt elementary to Dr. Wright, and there must have been a reason for this questionable title.

HERBERT K. ZASSENHAUS: I should like to follow a step further the suggestion of Professors Parsons and Schumpeter to distinguish that which in Marx is prophecy from that which is scientific sociology.

There are a great many parts of Marx's contribution to economics and sociology which can be considered as highly fruitful hypotheses for the analysis of a capitalist society, as first approximations to the explanation of a highly complex social phenomenon: the two-class schema, the hypothesis of the class struggle, a special form of historical and philosophical materialism, quite generally the emphasis on the historically variable structure of (particularly capitalist) society, a quasi-classical theory of distribution, and a set of hypotheses, still too much neglected, for the explanation of crises and cycles based on a very suggestive theory of investment (or "accumulation"). To forestall what might seem to be the implications of Professor Wright's paper, it needs, I am afraid, emphasizing that this is a formidable array of powerful analytical and interpretative tools. Some are scientifically perfectly acceptable as first approximations, though of course in need of substantial qualification and refinement; some are not. Generally, the less Ricardian Marx's economics, and the less Hegelian his sociology, the better for either, respectively.

On the other hand, there are parts of Marx's contribution which cannot be characterized but as social theology—dogmatic, dialectical, and mystical in the strict sense of these terms: "classes" assume a reality independent of that of their members, there is the millennial idea of a classless society, of

the "withering away" of the state (both of which are strictly social miracles), and that peculiar socio-philosophical mysticism called the "sociology of knowledge" which typically combines a correct sociological observation with an untenable and analytically insidious philosophical dogma.

I do not here propose to discuss the Marxian transition from sociological analysis to social theology. Considering the two major papers of this session, however, I should say that Professor Parsons' paper would seem to be an erudite and very interesting attempt to point out some of the directions in which the best of modern sociology has developed the Marxian hypotheses; though Professor Parsons' emphasis on types of internal kinship structure as characteristics of social classes (or perhaps only as useful measures for the structural strength of classes) would seem to me to merit careful critical scrutiny.

On the other hand, I find it very unfortunate that Professor Wright should have chosen precisely Marx's social theology as the basis from which he launches his severe attack on both "radical" and "liberal" "planning." Does the economic prescription of planning (even in the extreme sense of this elusive word) really imply a classless society—and does the impossibility of the latter really invalidate the former? Do we not have here the apocryphic Road to Serfdom all over again? I cannot suppress the suspicion that the dogmatism which long and painful labor had succeeded in driving from other sectors of economics and sociology are now to take refuge in the economics and sociology of planning. The myth of the (planned) classless society (with or without the admixture of such things as "popular democracy" in the perfectly justified denouncing of which Professor Wright so generously, and I am afraid with less justification, uses the indictment of "nineteenth century illusion") would be locked in battle with the equally potent myth of a (presumably unplanned) society characterized by "constant infiltration from below, on independent terms" (i.e., a society of "good sports"). "Of course," Professor Wright adds, this "does not mean one-hundred per cent *laissez faire*." I may be permitted to wonder how many per cent are left, if we are neither to undertake the formidable planning project of establishing such an unplanned society, nor to hope that complete abstention from any plans will assure the formation of "a myth which will reconcile men to 'legitimate' disappointment and insecurity."

I agree with Professor Wright that it was extremely unfortunate that Marx's dogma of the classless society should ever have formed the platform for the advocacy of economic planning. But this is an indictment of that dogma; the question of planning can be decided on less unsafe grounds. I also agree that the two sorts of conflict to which Professor Wright has drawn our attention are quite real. I very much doubt, however, whether they can be fashioned into an effective answer to, or a useful development of, Marx's two-class schema—even in the Veblenesque form which Professor Wright gives them. Moreover, even if it could be shown that "the Marxian and modern ultra-liberal analysis, alike" is based on the "naïve psychological view of man as a consumption machine," and this view, in turn, derives from the "nineteenth century ideology" of "the utility calculus"—the two links to join

these three would seem to me to be rather tenuous at best—this “error” has been so very useful as an analytical abstraction that I cannot share Professor Wright’s severe strictures against it. The instinct of workmanship, on the other hand, would seem to need considerably more precision and specification to serve as a useful replacement.

I wonder, further, whether the Marxian emphasis on the evils of “exploitation,” on the resultant distributive inequalities, and his insistence on a (planned) classless society as the remedy has not also had the consequence of diverting our attention from the fact that in all planned or partially planned economies of which we know so far, the distributive and the allocative goals have yielded first rank of importance to developmental aims: all present operating plans (including war economies) are developmental plans; planned economies are high-pressure economies at or beyond the margin of tolerance of concentrated investment, and the economics of such systems and that of rapidly progressive non-planned systems are very similar. This economic similarity is accompanied by the similarity from the sociological point of view to which Professor Parsons has very rightly drawn attention. To follow up his suggestion that it is perhaps industrialization (or other forms of economic development) rather than capitalism or socialism which determines to a large extent the class structure of a society would seem to me to be a very profitable undertaking—more profitable than to widen the analytical gulf between the two—and at the same time a promising extension of some of what is best in Marx.

Finally, a comment on what seems to me to be a serious and unnecessary weakness in the defense of democracy, to which I am tempted by the last sections of Professor Wright’s paper, and I make it here at the risk of not disagreeing with him. He very aptly points out that the tyrant is not the more amiable for being a “compassionate, soft-hearted ascetic”—but I wonder whether the only acceptable alternative is the sovereign voter or consumer whose right to make a fool of himself is unrestrained (except perhaps by the hope that he may not use it to the limit). The phrase, “the right to make a fool of oneself,” is certainly not free from ambiguity. The right to be heard no matter how much of a fool of ourselves we make is one thing; the right to be free to do wrong (or, if you like, to consume wrong) is clearly quite another. There is no avoiding it—and perhaps we have been too reluctant to admit or even to consider it: consumers and voters may be wrong (and we have in fact agreed that in a good many cases they are). Where we do not yet know when they are in fact right or wrong, it is essential that the avenues to the improvement of our knowledge and the means of acting upon imperfect knowledge not be monopolized. We should expose ourselves seriously and unnecessarily to the advocates of tyranny if we were to surrender, or confuse, the objectivity of value standards for voters and consumers with the tyrannical monopoly of political or economic power. The decisions for democracy and against tyranny and on the degree of planning are procedural and not substantive decisions, and I am afraid we could be accused of unjustified complacency if we were satisfied with an acceptable procedure only, however important this latter is.

CURRENT RESEARCH IN BUSINESS CYCLES

BUSINESS CYCLES IN THE INTERWAR PERIOD: THE "QUANTITATIVE-HISTORICAL" APPROACH

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A review of the literature speedily convinces one that we still know distressingly little about the causes of economic fluctuations in the United States in the period between the two Great Wars. In this paper, I shall indicate what, in my opinion, are some of the most important unanswered questions about this period and how we may best go about trying to answer them. In a sense, this paper is a first report on a larger project dealing with American business cycles during the interwar years which is now in progress.¹

I. *Questions We Need to Answer*

The need for more detailed study of this period is easily documented. Even the best of the existing studies of business cycles during the interwar years have not brought about general agreement among economists as to the nature and causes of the major cyclical fluctuations between 1919 and 1939.² To be more specific, consider the following questions, to which, so far as I know, satisfactorily detailed answers do not now exist.

1. What were the most important secular forces operating upon the American economy during the interwar period, and how were these secular forces related to both the boom of the twenties and the depression of the thirties? It is now generally accepted that secular and cyclical movements are interrelated and that an understanding

¹ This project is being financed by the Rockefeller Foundation and by the Bureau of Business and Economic Research of the University of California. The generous assistance of both organizations is gratefully acknowledged.

² The best studies of interwar cycles in the United States are probably: S. H. Slichter, "The Period 1919-1936 in the United States: Its Significance for Business Cycle Theory," *Review of Economic Statistics*, Vol. 19 (Feb., 1937), pp. 1-19; J. A. Schumpeter, *Business Cycles* (New York, 1939), Vol. II, Chs. 14-15, and "The Decade of the Twenties," *American Economic Review*, May, 1946, pp. 1-10; J. Tinbergen, *Statistical Testing of Business-Cycle Theories, II, Business Cycles in the United States of America, 1919-1932* (Geneva, 1939); Thomas Wilson, *Fluctuations in Income and Employment* (London, 1942), Part II; N. J. Silberling, *The Dynamics of Business* (New York, 1943), esp. Chs. 12-15; L. R. Klein, *Economic Fluctuations in the United States, 1921-41* (in press, to be published by the Cowles Commission for Research in Economics); *ibid.*, "The Use of Econometric Models as a Guide to Economic Policy," *Econometrica*, April, 1947, pp. 111-151. See also Slichter's article on the 1937 downturn, *Review of Economic Statistics*, August, 1938, pp. 97-110, and Kenneth Roose, "The Recession of 1937-38," *Journal of Political Economy*, June, 1948, pp. 239-248.

of the causes of short-run instability requires a detailed knowledge of the long-run forces operating on the economy.³

2. The role of World War I in influencing cyclical and secular developments needs further study, particularly for the United States—where war-created dislocations were less obvious than in Europe. In this connection, we need to compare secular movements before 1914 with the changes which occurred after the war. To what extent, and in what sense, did World War I create a “break in trend” in important sectors of the economy?

3. Partly because of our uncertainty regarding the answers to these questions, there is no consensus on how to interpret the total pattern of change during the interwar years. For example, should the entire period 1921-33 be considered a “major” cycle, on which were superimposed several minor cycles? How shall we draw the secular movements during 1919-39? Should we recognize both “primary” and “secondary” trends? And so on.

4. We need more study of the timing and extent of the apparent “drying-up” of investment opportunities at the end of the twenties. For each major industry, what was the nature of the market situation and the prospects for further investment in 1928-29, and how did the changes which occurred during the twenties affect developments from 1929 on? To what extent were the deflationary forces at work merely cyclical, and to what extent also secular?

5. We have few detailed studies of significant cyclical turning points during the interwar period.⁴ In particular, there is no adequately detailed study of the 1929 turning point, which should include a detailed analysis of the behavior of significant industries in the neighborhood of the downturn in total activity. Studies of turning points should be integrated with an analysis of the preceding cumulative phase and should aim at throwing light on three questions: where and why deflationary or expansionary stimuli originate, through what

³ Writers with such different approaches to business cycle analysis as Schumpeter, on the one hand, and A. F. Burns and the National Bureau of Economic Research, on the other, seem to agree on this point. Schumpeter's views are well known. Note the emphasis given in the National Bureau's research program to the studies of secular changes in income, production, employment, and productivity since 1900 or earlier in various sectors of the economy. In addition to these individual studies, see the interpretive summary of findings by George Stigler, *Trends in Output and Employment* (New York, 1947).

⁴ There is some consideration of timing relationships at the turning points in 1927, 1929, and 1932-33 in W. C. Mitchell and A. F. Burns, “Production during the American Business Cycle of 1927-1933,” *National Bureau of Economic Research Bulletin* 61 (November, 1936). See also the turning point analysis in Slichter's two articles on the interwar period. Slichter's articles, excellent as they are in some respects, have two main defects. They are not sufficiently systematic and detailed in their study of timing relationships at the turning points, and, more important, his study of turning points is not integrated with an analysis of underlying cyclical and secular developments. The latter criticism applies also to Roosevelt's study of the turning points in 1937 and 1938. (See his article previously cited and his doctoral dissertation on which the article is based.)

channels they are transmitted, and approximately what weights should be attached to the various originating forces. While discouragingly little can be done with this third question, some rough quantitative statements should be possible.⁵

6. The facts regarding the relations between income and consumption, in the aggregate and for significant segments of the economy, need to be more fully explored, both for the twenties as a whole and for the 1929 downturn. The main job here is putting together the numerous partial, and partly contradictory, pieces of evidence. Reliance on a few aggregative series, without examination of other relevant evidence, is not enough.

7. It is generally agreed that, over and above the causes that initiated the downswing of 1929-33, a combination of additional factors contributed to the peculiar severity of the decline. But we are unable to give precise answers to such questions as the following:

a) What, specifically, was the role of the various causes which have been cited as contributing to the length and severity of the Great Depression?

b) What happened after 1929 to each of the main sources of investment in the twenties? In what industries was investment particularly deficient, and what can we say about the causes of these deficiencies (in terms of both the demand and supply of investment funds)?

c) How was the world-wide collapse in international trade related to developments in the United States? How were cyclical forces transmitted internationally, both on the downswing and during the stirrings of revival in 1932-33?

d) If we do make a distinction between the forces that initiated the depression and those that accentuated its severity, how did the interrelationships between these two sets of forces change as time went on? In this connection, more attention needs to be paid to the abortive recoveries in 1930 and 1931. The reasons for these slight revivals and the causes of their quick termination should throw valuable light on the deflationary forces operating during 1929-32.

8. The attention of business cycle students has usually centered on upper turning points, to the neglect of the factors responsible for initiating revivals. We need a careful study of the lower turning point in 1932-33. What industries led in the brief 1932 upturn? Which most strongly resisted further deflationary pressures? What, generally, were the favorable and unfavorable factors in the business

⁵ Eventually, the techniques and models of the sort being developed by Leontief may permit us to make significant statements about the quantitative importance of various initiating forces uncovered by an integrated study of a particular turning point and the preceding cumulative phase.

situation in 1932? Similar questions can be asked concerning developments in March, 1933, and again at the end of 1933 after the brief "NRA boom" had collapsed.

9. The considerable literature on the cycle of 1933-38 does not give clear-cut answers to either of the two key questions: (1) What were the immediate causes of the turning points in 1937 and in 1938? (2) What factors were responsible for the unsatisfactory nature of the recovery during 1933-37? The first question requires a detailed turning-point analysis of the sort that we referred to in discussing the 1929 peak. To secure a more satisfactory answer to the second question, we need to complete the study of secular forces mentioned earlier and to compare in detail the factors affecting production and investment in 1935-39 with those prevailing in the late twenties.

10. Thus far we have emphasized the gaps in our knowledge concerning the "major cycle" of 1921-33 and the cycle of 1933-38. While our information about the cycle of 1919-21 is fairly good, we need to know much more concerning the "minor cycles" between 1921 and 1929. Time does not permit a detailed listing of the more important questions that remain unanswered here.⁶

II. The Statistical Approach to Empirical Business Cycle Research

The questions we have raised obviously imply an application of the so-called "historical" approach to empirical business cycle research, in contrast to what may be termed the purely statistical approach. A few comments on the usefulness of both methods in "explaining" past cyclical fluctuations may be in order.

The various versions of the "statistical" approach have this in common. For periods covering several business cycles, they look for patterns of systematic behavior in significant statistical series which can form the basis of generalizations about the nature and causes of business fluctuations. Either whole cycles or the successive data for individual months or years are taken as "observations" on "underlying" patterns of behavior, and statistical techniques are then applied to these observations in order to uncover the typical patterns and interrelationships which may exist.

Two versions of the statistical approach are currently attracting

⁶The reader will undoubtedly want to supplement this list of questions with others which he thinks are equally or more significant. In particular, he may miss any reference to such debated issues as the effects of monetary policy on developments before and after 1929, the role of capital gains in stimulating spending, the effect of the stock market crash, and so on. Such questions would automatically come up for consideration in dealing with the issues raised in the text. The form in which I have put the latter suggests the directions in which I think empirical work can be most profitably pursued. The result should throw light on many questions besides the ones specifically raised in the text.

attention: the econometric work of Tinbergen and the Cowles Commission group⁷ and the business cycle studies of the National Bureau of Economic Research.⁸ It may seem odd to classify together two groups which differ so radically on fundamental problems of methodology,⁹ but there is a basic similarity between the two which should not be neglected. Both are interested primarily in typical, statistical relationships and behavior. In contrast to the historical approach, emphasis is not placed upon detailed, over-all studies of individual cycles or turning points. Particular cycles or cyclical phases are "explained" chiefly through generalized explanations which apply to all cycles in the period under study. In addition these and other versions of the statistical approach find it difficult to handle information which cannot be quantified and expressed in the form of averages or functional relationships.¹⁰

The heart of the econometric approach is the search for "structural behavior equations" which will explain the movement over time of significant economic variables in terms of other variables which are included in the model. Basically, it represents a sophisticated and elaborated application of least-squares analysis applied to time series.¹¹ Equations are first set up to reflect the investigator's judgment of the significant relationships which govern changes in economic activity, and statistical techniques are then applied to the data to secure the parameters for these equations. The equations thus secured are taken

⁷ See J. Tinbergen, *op. cit.*, also his *Statistical Testing of Business-Cycle Theories: I, A Method and Its Application to Investment Activity* (Geneva, 1939), and his paper on "Econometric Business Cycle Research," reprinted in *Readings in Business Cycle Theory* (Philadelphia, 1944); L. R. Klein, "The Use of Econometric Models as a Guide to Economic Policy," *op. cit.*; *ibid.*, "A Post-mortem on Transition Predictions of National Product," *Journal of Political Economy*, August, 1946, pp. 289-308; also the monograph by Klein previously cited. See also T. Haavelmo, "Statistical Testing of Business-Cycle Theories," *Review of Economic Statistics*, February, 1943, pp. 13-18, and the essay on "Econometrics," by Wassily Leontief in H. S. Ellis, editor, *A Survey of Contemporary Economics* (Philadelphia, 1948), especially pp. 403-407.

⁸ See, in particular, A. F. Burns and W. C. Mitchell, *Measuring Business Cycles* (New York, 1946), and the mimeographed chapters of W. C. Mitchell's *What Happens during Business Cycles*.

⁹ See, for example, T. C. Koopmans' highly critical review of *Measuring Business Cycles* in *Review of Economic Statistics*, August, 1947, pp. 161-172, and the forthcoming exchange between Koopmans and Rutledge Vining to be published in the same journal.

¹⁰ These comments require some qualification with respect to the National Bureau's methods. The qualifications would apply more to the potentialities of the Bureau's approach than to the results thus far published. While averages and cycle "patterns" bulk large in what the Bureau has thus far done, the data for individual cycles are available for analysis, and the statistical records for individual cycles or specific series can be analyzed in conjunction with nonquantitative information.

¹¹ The advance of modern econometric business cycle research over earlier correlation studies has been chiefly along two lines: (1) the construction of complete equation systems or models to portray the behavior over time of all aggregative variables thought to be significant in explaining and predicting the level of business activity and (2) the adoption of probability reasoning in applying these models to reality and the consequent use of recent contributions to the theory of statistical inference in estimating the parameters of the equations used.

to describe the dynamic behavior of the economy and to "explain" why the endogenous variables change as they do over the business cycle.

Current econometric research in business cycles has a number of serious weaknesses. As tools of empirical research, econometric models are too simple and too rigidly bound by the set of hypotheses chosen. To permit of statistical estimation, these models must contain relatively few equations (even twenty or thirty are few in this context), and the total number of variables must be correspondingly limited. As a result, the variables studied tend to be broad aggregates and broad index numbers. Further, the functional relationships are taken to be of a simple form and, more important, are assumed not to change in the period being covered. This is a dangerous assumption to make when not all of the possibly significant variables are included in the model.

Reliance on broad aggregates and on unchanging, simple functional relations is particularly questionable in a field where observation tells us that the behavior of components is of strategic importance and that the role of these components varies from cycle to cycle and even within the same cycle. In addition, econometric studies of the cycle suffer from the same technical weaknesses that have always plagued multiple-correlation studies of time series—intercorrelation among the "explanatory variables" (nearly all of which move roughly in the same cyclical pattern) and a reduction in "degrees of freedom" as the number of variables is increased.¹²

Econometric studies leave untapped all information which cannot be put into the chosen system of equations. "Exogenous variables" are included as given data—which means that the attempt is made to measure the effects of such variables on the other parts of the model, but no effort is made to explain the behavior of these "exogenous" events. But numerous factors are not taken into account at all—because precise data are not available, because these factors are not measurable, because they may be judged to be nonsignificant on a priori grounds, and so on.

The econometric approach excludes two types of study of considerable importance in business cycle research. It does not attempt to trace channels of transmission of initiating forces, partly because this in-

¹² Econometric studies of economic behavior over time have thus far been further hampered by the almost exclusive use of annual data, which are too crude for business cycle analysis. Resort to quarterly or monthly data raises another problem, that of high correlation between successive pairs of observations of the same variables. See, however, Koopmans' comment that "statistical theory is sufficiently flexible to face" situations in which there is high serial correlation, as in quarterly and monthly data, though the "mathematical and computational difficulties inherent in such a situation pose technical problems which need to be overcome." *Op. cit.*, p. 170.

volves dealing with an unwieldy mass of variables, partly because the econometric technique precludes *ad hoc* judgments by the investigator regarding cause and effect sequences. Secondly, the method deals with a given time period in isolation. No attempt is made to relate observed behavior during this period to what has gone on before, or to separate secular and cyclical forces (which can be done only if the period of investigation is related to preceding decades).¹³

For these reasons, among others, econometric techniques give us high correlations but fail to yield convincing explanations of the causes of cyclical fluctuations. They may tell us that a given set of observed facts is not inconsistent with the hypotheses embodied in the model chosen. But if the facts are equally consistent with a quite different but equally plausible set of hypotheses, we are not much better off than when we began. And there may be still other hypotheses, not yet tested, which fit the facts equally well.¹⁴

The techniques thus far employed by the National Bureau also do not take us very far in answering the questions raised regarding cyclical behavior in the interwar period. The National Bureau has sought to uncover the average or typical behavior of economic series over a large number of cycles. Thus far, the emphasis in the Bureau's specific work on business cycles has been on typical patterns of behavior displayed by individual series during "specific" and "reference" cycles—on "specific" and "reference" cycle *patterns*.

The delineation of such patterns serves a useful purpose, for it increases our ability to generalize about the characteristics which business cycles tend to have in common. But, if causal relationships vary from cycle to cycle as much as observation leads us to expect, this form of the statistical approach is not a substitute for detailed historical

¹³ As a matter of fact, current econometric business cycle research does not even require the assumption that business cycles exist. The method is applicable to static models of the Keynesian type or to "dynamic" models which introduce lags and rates of change. Even the dynamic models do not recognize the cycle as a unit of experience requiring separate analysis; the models "explain," through the invariant functions included, why the endogenous variables are what they are in any particular unit of time, regardless of the particular cycle or cyclical phase into which that unit of time falls.

¹⁴ Hence I view with skepticism Schumpeter's statement that "the highest ambition an economist can entertain who believes in the scientific character of economics would be fulfilled as soon as he had succeeded in constructing a simple model displaying all the essential features of the economic process by means of a reasonably small number of equations connecting a reasonably small number of variables." ("The Decade of the Twenties," *op. cit.*, p. 3.) Will it ever be possible to display "all the essential features" of economic behavior in this fashion? If the number of variables is "reasonably small" and therefore composed of broad aggregates, can we get the amount of detail we need to speak with confidence of specific causes? And as pointed out, models that seem to "fit the facts" do no more than tell us that one set of hypotheses is not inconsistent with these facts. Other sets of hypotheses may be equally consistent. In this respect, the writer shares the skepticism voiced by Keynes in his review of one of Tinbergen's studies, though Keynes did not always stand on firm ground in his detailed technical criticism. Cf. *Economic Journal*, September, 1939, pp. 558-568.

studies of individual cycles.¹⁵ Also, the Bureau's business cycle research thus far has been concerned primarily with setting forth the facts, in the form of measures of average cyclical behavior of specific series. The task of explanation and interpretation still lies ahead.

In this connection, the Bureau's choice of cycle units probably lessens somewhat the usefulness of the work thus far done. Mechanical criteria are set up for marking off cycles in aggregate activity and in specific series, and these criteria preclude the recognition of possible "major cycles" underlying the business cycles which are recognized. Thus, for our period, the Bureau mechanically marks off "business cycles" according to the familiar turning points (which are listed in footnote 22). No measures are computed for the underlying swing of 1921-33; the decline of the thirties is related only to the truncated expansion of 1927-29. Each of the shorter cycles becomes a unit in the averages which are computed.¹⁶

Since so much of the evidence points to the need of treating the period 1921-33 as a cyclical unit, we are enjoined from using many of the results of the National Bureau's analysis of the cycles during this period. At the same time, however, we shall place heavy reliance upon what are perhaps the Bureau's two main contributions to empirical business cycle research thus far: their invaluable compilation of original data, corrected for seasonal variation,¹⁷ and their many excellent monographs on the behavior of income, production, prices, and other variables in different sectors of the economy.

III. *The Historical Approach*

The essential characteristics of the historical approach to empirical cycle research are these. The emphasis is on explaining behavior during particular cycles, rather than on obtaining general conclusions that apply to all cycles within a given period. Full use is made of qualitative as well as quantitative information. The approach does not require precise measurement of functional relations or the preliminary setting up of complete theoretical models. Causal inference depends upon personal interpretations and judgment after detailed examination of the available evidence. A variety of statistical techniques—including econometric studies—may be employed. In addition, the approach should entail placing the cycle or period being studied in the context

¹⁵ Nor, I gather, would Mitchell or Burns suggest that it was. In this connection, see the comments on the potentialities of the National Bureau's methods in footnote 10.

¹⁶ See Mitchell's and Burns's brief comments on the relative advantages of treating the cycle of 1921-33 as a single unit of experience and of breaking the period up into segments corresponding to the shorter cycles. "Production during the American Business Cycle of 1927-1933," *op. cit.*, p. 2.

¹⁷ The attitude of unstinting co-operation by Professor Burns and his fellow workers at the National Bureau in making this material available calls for special acknowledgment.

of the dynamic forces operating over a considerable period in the past.

The historical, no less than the statistical, approach entails initial theorizing—setting up working hypotheses. But the role of theory in both approaches can vary over a wide range. At the one extreme, complete theoretical models may first be constructed, in terms of which an attempt is made to “explain” historical events. This, for example, is the method used by Schumpeter, and also in the econometric model-building of the Cowles Commission group. More often, the historical approach utilizes theory chiefly as a guide to suggest significant types of relationships to examine in attempting to explain particular fluctuations.¹⁸ This particular relation between theory and empirical research can be extended into the formal “testing” of alternative theories.¹⁹ The econometric approach can also do this by trying different models, each being tested against the data in turn.

The three most important historical studies of business cycles in the interwar period are probably those of Schumpeter, Slichter, and Wilson.²⁰ Each contributes significantly to our knowledge, but, in varying degrees, each falls short of providing satisfactory answers to most of the questions asked in the preceding pages.

Time does not permit a full critical evaluation of these studies here, but some of their limitations may be mentioned briefly. Of the three authors, only Schumpeter attempts to place the interwar period in the setting of secular movements originating before 1914, and his analysis is seriously hampered by his adherence to an unchanging theoretical and statistical model. None of the studies attempts to assess the *quantitative* significance of secular and cyclical developments in strategic sectors, and none provides an analysis of the major turning points in the detail and along the lines which we have described as necessary. All three studies generally fail to present the available evidence in sufficiently detailed and systematic form.

We may conclude that the possibilities of applying the historical approach to a study of business cycles in the interwar period have been far from exhausted. It also seems reasonable to say that, in further applications of the historical approach to this period, the following lines of inquiry need particularly to be emphasized:

1. Consideration of the fluctuations during 1919-39 against the

¹⁸ This is essentially what is done in Slichter's study of turning points during 1919-36.

¹⁹ This is Wilson's aim in the empirical section of his *Fluctuations in Income and Employment*. Even when formal testing of alternative theories is not the primary aim of a historical study, the analysis almost always permits some conclusions regarding the extent to which particular explanations are consistent with observed relationships during the period examined. Thus Slichter's article on the period 1919-36, which disavows the primary aim of checking theories against observed behavior, has a final section of “Tentative Conclusions,” a good many of which are concerned with the extent to which the evidence examined supports or refutes particular theories. (*Op. cit.*, pp. 17-19.)

²⁰ The full references are given in footnote 2.

background of secular and cyclical change during the several preceding decades.

2. Heavy emphasis upon the behavior of *segments* of the economy—particularly the components of total investment and also output and employment in particular industries.

3. Detailed study of the “anatomy” of turning points, with attention being paid to particular industries and particular types of spending as well as to significant aggregative variables.

4. Rough assessment of the quantitative importance of various segments of the economy affecting total employment and investment at turning points and during cumulative phases.

5. Finally, such a study should emphasize systematic coverage and presentation of data so that the reader can check the author’s judgments and interpretation as the analysis progresses. In the past, historical studies have too frequently been marred by the use of statistics merely for illustrative purposes.

For lack of a better term, we may refer to this method of analysis as the “quantitative-historical” approach. Our emphasis, as in purely statistical studies, is on quantitative measurement; but we deal with individual cycles and turning points and utilize qualitative evidence and personal judgment as they seem to be required.

While our approach is quantitative as well as historical, we recognize that frequently it is impossible to arrive at convincing judgments regarding the actual magnitude of various forces which we may be able to isolate as probable causes of particular fluctuations. As Schumpeter has noted,²¹ organic processes do not lend themselves to quantitative evaluation of causes, but certainly more is possible here than has thus far been attempted in historical studies.

IV. *Cyclical Patterns in the Interwar Period*

So much for how, in my opinion, the job should be done. In the little time remaining, I should like to comment briefly on the cyclical contours of the interwar period.

We can accept immediately the turning-point dates which the National Bureau has tentatively established for the cycles between 1919 and 1939.²² From this and other evidence, we secure the five business cycles that are usually recognized for the interwar period: 1919-21,

²¹ “The Decade of the Twenties,” *op. cit.*, p. 8.

²² These are:

Troughs: April, 1919, September, 1921, July, 1924, December, 1927, March, 1933, May, 1938.

Peaks: January, 1920, May, 1923, October, 1926, June, 1929, May, 1937.

See Burns and Mitchell, *op. cit.*, p. 78.

1921-24, 1924-27, 1927-33, and 1933-38.²³ The evidence is overwhelming, however, that not all of these cycles stand on the same footing. Whatever our opinion as to the occurrence of "major" cycles before 1914, it is clear that we should group together the three "business cycles" from 1921 to 1933, particularly if we are to attempt to explain the causes of the Great Depression following 1929.

We can therefore describe the cyclical pattern of the interwar period as consisting of (a) the postwar cycle of 1919-21, (b) the "major cycle" of 1921-33, on which were superimposed the short and relatively mild cycles of 1921-24²⁴ and 1924-27 and which culminated first in the spurt of 1928-29 and then in the prolonged and severe downswing of 1929-33, and (c) the "New Deal" cycle of 1933-38, with its unusually long but halting expansion,²⁵ which terminated with the sharp recession of 1937-38.

The cycle of 1919-21 consists of two asymmetrical phases. The decline in output and prices was much greater, in both amplitude and duration, than the upswing. The general contours of this cycle and the fact that important indicators had been reflecting an underlying expansion since 1914 suggest that 1919-21 was part of a longer cyclical swing—a major cycle—which began about 1914 and may have reached its peak (so far as physical volumes are concerned) in 1917 or 1918.²⁶ The three-year moving averages in Chart I delineate this major swing quite well.

The downswing of 1920-21 is usually compared to the depressions of the 1870's, 1880's, 1890's, and 1930's, as well as to that of 1907.²⁷ Actually, despite the sharpness of the drop in many business indicators, the depression of 1921 does not belong in the same class with most of

²³ What the writer means by "business cycles" is indicated by the following definition. Business cycles consist of recurring alternations of expansion and contraction in aggregate economic activity, the alternating movements in each direction being self-reinforcing and pervading virtually all parts of the economy. Further, but merely as a working rule which may on occasion be broken, we specify that business cycles usually last from about two to about twelve years. We may measure "aggregate economic activity" for this purpose by taking total output or total employment. Except for its criterion of "aggregate economic activity," this definition is similar to that of the National Bureau but has the virtue of being briefer. Cf. Burns and Mitchell, *op. cit.*, p. 3.

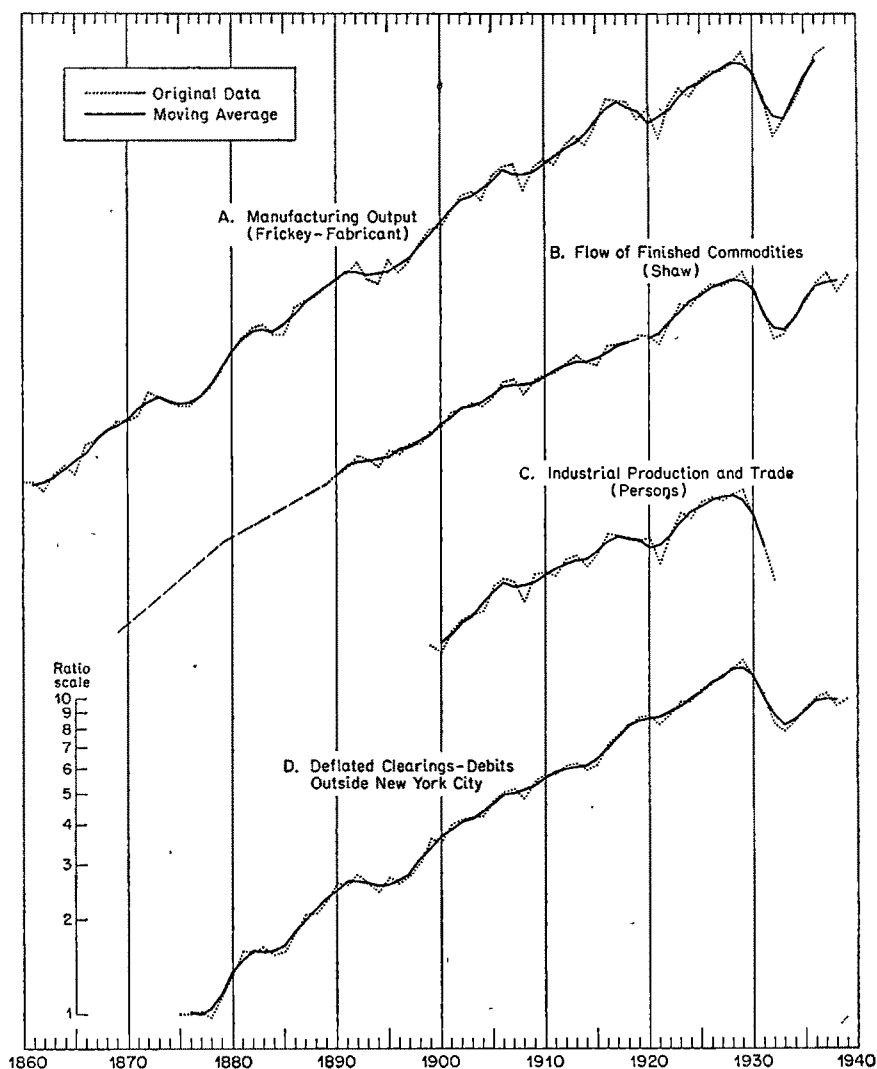
²⁴ As we shall emphasize later, the upswing of the minor cycle of 1921-24 was anything but mild. The 1921-23 upswing must be studied as part of the underlying expansion of 1921-29 as well as of the 1921-24 cycle.

²⁵ The longest earlier expansions recorded by the National Bureau (going back to 1854) were associated with the Civil War (46 months) and World War I (44 months). (See Burns and Mitchell, *op. cit.*, p. 78.) Since 1938, a new record has been established by the expansion which began in that year and ended in the latter part of World War II.

²⁶ The peak in prices and in total spending, of course, did not come until 1920.

²⁷ Cf., for example, A. R. Eckler, "A Measure of the Severity of Depressions, 1873-1932," *Review of Economic Statistics*, May, 1933, pp. 75-81; and J. B. Hubbard, "Business Declines and Recoveries," *ibid.*, February, 1936, pp. 16-23. Hubbard puts the 1920-21 decline in the same class (as to severity) with the downswings of 1882-85 and 1907-08 but rates it as being considerably less severe than the depressions of the '70s, '90s, and 1930's.

CHART I
ANNUAL MEASURES OF PHYSICAL VOLUMES, WITH THREE-YEAR MOVING AVERAGES



The nature and sources of the data are as follows:

- A. Frickey's index of manufacturing production, 1860-1899, and Fabricant's index, 1899-1937, both on the base of 1899. See Edwin Frickey, *Production in the United States, 1860-1914*, p. 54, and Solomon Fabricant, *The Output of Manufacturing Industries, 1899-1937*, p. 44.
- B. Flow of finished commodities plus construction materials, in 1913 prices, from W. H. Shaw, *Value of Commodity Output since 1869*, pp. 76-77.
- C. Index on 1923-25 as a base, from W. M. Persons and LeB. R. Foster, "A New Index of Production and Trade," *Review of Economic Statistics*, August, 1933, p. 155, col. 3.
- D. Outside bank clearings to 1919 and outside debits thereafter, deflated by Snyder's "Index of the General Price Level." Originally taken from F. R. Macaulay, *The Movements of Interest Rates, Bond Yields and Stock Prices in the United States since 1856*, Table 30, and continued by the National Bureau of Economic Research. This series has been transcribed directly from the National Bureau's files.

these other depressions for a number of reasons.²⁸ The downswing was relatively short.²⁹ While the depression involved drastic liquidation of prices, inventories, and short-term debts, it led to only the most temporary impairment of the business community's "propensity to invest." According to Kuznets' estimates, most of the decline in gross capital formation between 1920 and 1921 was accounted for by the difference in inventory accumulation. When adjusted for price changes, private business construction in 1921 was about as high as in 1920, and residential construction was larger. The flow of producers' durables declined by about a third, but this loss was more than regained by 1923. The moderate decline in consumers' expenditures between 1920 and 1921 apparently reflected merely the drop in prices. Kuznets' estimate of total consumers' outlay in constant prices is higher for 1921 than for 1920.

Add to these facts the character of the recovery between 1921 and 1923. The annual production series in Chart I, as well as other physical-volume series which are not plotted, suggest that the 1921-23 rise was the most vigorous cyclical expansion since the turn of the century and perhaps since the Civil War.³⁰ Nearly all the serious depressions of the past have been followed by one or more "submerged" cycles, in which industrial output failed to reach as high a level, relative to the underlying trend, as did the preceding peak. Such "submerged" cycles seem to have occurred after the crises of 1837, 1857, 1882, 1893, and even 1907, as well as after the 1929-33 downswing.³¹

Eckler rates it as of the same order of severity as the declines of 1873-78 and 1892-94 and as being more severe than those of 1882-85 and 1907-08. Burns and Mitchell include 1920-21 in their list of the five most severe depressions since the Civil War. (*Op. cit.*, pp. 455, 462.) Their table on p. 403 suggests that it was more severe than the contractions of 1882-85, 1893-94, or 1907-08.

²⁸ Though it did mark the end of what we call a major cycle.

²⁹ Cf. the durations of other contractions listed in Burns and Mitchell, *op. cit.*, p. 78.

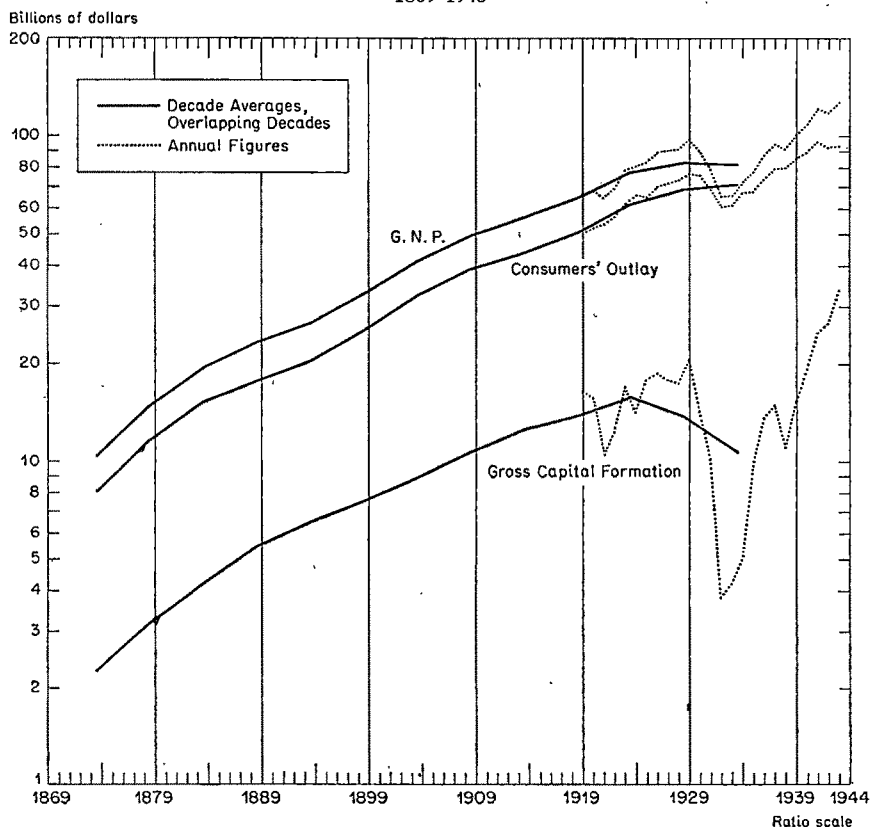
³⁰ A table in Burns and Mitchell, *op. cit.*, p. 403, confirms this conclusion, although it must be noted that these authors dealt only with trend-adjusted series. The total rise after the decline of the seventies was probably greater (making no allowance for trend), but it was not as rapid. In addition to the series in Chart II, the writer has examined the monthly indices of the American Telephone and Telegraph Company (since 1899) and Babson (since 1871) and the annual indices of Barron's (since 1899) and Silberling (which goes back to 1700). The series for monthly deflated outside bank clearings (continued by bank debits after 1918) does not suggest that the 1921-23 expansion was as vigorous as some of the cyclical upswings before 1914. (See Burns and Mitchell, *op. cit.*, chart facing p. 372.) Given the well-known weaknesses of deflated clearings and debits as measures of the physical volume of business activity, I am inclined to place more confidence in the direct measures of physical volume.

³¹ As in the 1930's, the long decline following 1873 prevented the emergence of a short cycle before the next major expansion began. The ensuing long upswing was part of a major cycle, superimposed on a marked upward trend, which led to a peak in the early eighties substantially above that of 1873. But even with the help of the underlying secular rate of growth, industrial production did not exceed the 1873 peak until about 1878. Compare Chart I and Edwin Frickey, *Economic Fluctuations in the United States* (Cambridge, Mass., 1942), chart facing p. 180.

This does not seem to have happened after 1921. The ensuing expansion put the 1923 peak in most production series significantly above that in 1920. (See Charts I and II.) Of course, we are not

CHART II

GROSS NATIONAL PRODUCT, CAPITAL FORMATION AND CONSUMERS' OUTLAY, 1929 PRICES
1869-1943



Source: Simon Kuznets, *National Product since 1869*, pp. 52, 119.

sure how much allowance to make for trend, and it is possible to draw the underlying trend so sharply upward that the "trend adjusted" figure for 1923 is no higher than for 1920. There is strong reason to believe, however, that the trend in total output and in industrial production was not so steeply inclined.

Let us now look at the period 1921-29. Taking first the cycle of 1921-24, we note immediately the asymmetry between the expansion of 1921-23 and the contraction of 1923-24. Monthly indices of industrial production are unanimous in indicating that the downswing was, in absolute terms, less than half the preceding rise. Indeed some annual measures show little or no decline in 1924.

The recovery after mid-1924 was very rapid until the early months of 1925. Then ensued a period of remarkable stability, but with continued expansion, until the beginning of 1928. Expansion during 1925-26 was generally at a much slower rate than during 1921-23. The recession of 1927 was so mild as to show up in many series merely as a decline in the rate of advance.

Then followed the boom of 1928-29. Industrial production advanced at the most rapid rate since 1923, and the rise in GNP between 1928 and 1929 was the largest of any year since 1923.³² I should like to emphasize several points about this final spurt in output: the rapidity of the rise, the fact that the expansion started from a relatively high level, and the composition of the increase in output and GNP. Regarding this last point, we should note the sharp rise in inventory accumulation, the marked increase in the flow of producers' durables, and the fact that manufacturing suddenly became again the chief generator of expanding incomes and employment. (During 1923-28, finance, service, and government each accounted for a larger increase in national income than did manufacturing, and employment in manufacturing actually declined during these years.³³) As a result of the increase in inventory accumulation and in producers' durables, gross capital formation rose sharply in 1929, despite a decline in construction. And here we may point to another significant contrast, which is brought out in Chart II. Whereas the rise in GNP from 1923 to 1928 took the form primarily of an expansion in consumption, capital formation changing relatively little, gross investment rose relatively much more than consumption in 1929 and even matched the absolute increase in the latter.

We thus get a picture of an underlying expansion continuing from 1921 to 1929, but with much the larger part of the rise occurring in the first two years of sharp recovery and in the last year's final spurt. During the five intervening years, from 1923 to 1928, we find the underlying expansion taking the form of a continued rise in consumption but with little expansion in investment. We should now look at the components of consumers' outlay and capital formation in more detail, but the pressure of time makes that impossible here.

The 1929-33 decline was the longest since the contraction of the seventies. In amplitude, it was almost certainly the most severe since the Civil War, and perhaps in our entire history.³⁴ This long downswing

³² However, the annual estimates of Kuznets (for the GNP), by Shaw (for total commodity flow) and by Fabricant (for manufacturing output) all agree that, taking two year intervals, the total rise from 1927 to 1929 was somewhat less than during 1924-26 and, of course, considerably less than during 1921-23.

³³ Cf. Simon Kuznets, *National Income and Its Composition, 1919-1938* (New York, 1941), Vol. I, pp. 310, 314.

³⁴ Cf. Eckler, *op. cit.*; Hubbard, *op. cit.*; and Burns and Mitchell, *op. cit.*, pp. 403, 455. See also such measures of economic activity going back to the Civil War or earlier as those of Silberling (*The Dynamics of Business*, pp. 39, 50-51), Ayres (Cleveland Trust Index), and Babson (going back to 1871).

is clearly not symmetrical with the rise during 1928-29. If we are to find a meaningful cyclical unit in which to include this decline, clearly we must take the entire period 1921-33. We do not need a rigid model such as Schumpeter's to insist that the major swing of 1921-33 is a more significant unit to study than the cycle of 1927-33.

Further evidence of the cyclical unity of the period 1921-23 is provided in Chart I. Here three-year moving averages have been drawn through several annual series measuring changes in the physical volume of production and trade. (Between 1885 and 1914 and again during the 1920's minor cyclical fluctuations regularly ranged between three and four years in duration.³⁵) In all of the series shown, the moving average traces out a major cycle from 1921 to 1932 or 1933 which is striking in its amplitude and regularity of movement. The chart also suggests that there has been no other major cycle of comparable amplitude since the 1870's. While the expansion of 1921-29 was perhaps not unprecedented, the decline after 1929 clearly was.

Chart I deserves careful study. It lends support to the hypothesis that a distinction should be made between major and minor cycles, but it also suggests that the major swings have not followed any regular pattern and sometimes scarcely seem to show up at all. So far as the observed behavior of output is concerned, the chart lends no support to rigid—as opposed to flexible—versions of the major-minor cycle hypothesis. Major cycles, granted they exist, do not seem always to include some given number of minor cycles. They may include none at all.

Charts I and II together also deserve study for the light they may throw on the secular forces operating on the twenties and thirties. There seems to be some evidence in these charts that the rate of growth in output was subject to some degree of retardation before 1929 and perhaps before 1914. This is a point on which there is disagreement, and I shall not push the issue here.³⁶ Our ability to generalize regarding the degree of secular retardation, if any, is further complicated by the fact that there have been long-term oscillations in the rate of growth—what A. F. Burns has called trend-cycles.³⁷ To this writer, Charts I and

³⁵ Cf. Burns and Mitchell, *op. cit.*, p. 78.

³⁶ Stigler believes that there was no retardation between 1899 and 1929 (*Trends in Output and Employment*, p. 10). More cautious statements that the evidence is inconclusive will be found in A. F. Burns, *Production Trends in the United States since 1870* (New York, 1934), pp. 271-279, and Frickey, *op. cit.*, pp. 199-201. Kuznets, on the other hand, finds clear indications of retardation in the rate of growth of the national income. See *National Income: A Summary of Findings* (New York, 1946), pp. 34-39. The fact of retardation in total output is also accepted by A. G. Hart in *Money, Debt and Economic Activity* (New York, 1948), p. 265.

³⁷ Cf. Burns, *Production Trends*, Ch. 5; Kuznets, *National Income: A Summary of Findings*, pp. 60-71. These "trend-cycles" or intermediate swings in rates of growth are not to be confused with the "long waves" associated with the name of Kondratieff.

II suggest that the underlying rate of growth in the twenties—particularly in capital formation—was less than it was between the nineties and 1914, and significantly less than it was in the seventies and eighties. However, we need to disentangle the “primary” from “intermediate” (or “trend-cycle”) movements, and even then we may not be able to reach clear-cut conclusions as to the relative roles of cyclical and secular forces in the twenties and thirties.³⁸

A final word about the thirties. The interwar years after 1933 cover only one complete cycle—with a rise from March, 1933, to May, 1937, and a subsequent decline to about May, 1938. Here again there is a marked lack of symmetry between the expansion and contraction phases. The upswing was the longest in the National Bureau's records; and, since it began from a low level, the total rise was very large, even though output and employment at the peak were little if any higher than in 1929. The contraction was very short. Though the decline was precipitous, it ended quickly enough to leave the trough far above the levels of 1932-33. The recovery after the 1938 low point was rapid, so that by the end of 1939 the 1937 level had been reattained. Hence, so far as statistical behavior is concerned, the downswing of 1937-38 does not belong high on our list of “severe” depressions. It apparently belongs in the same category as the downswings of 1920-21 and 1907-08.³⁹

V. Conclusion

I must apologize for the briefness and generality of my remarks about the cyclical contours of the interwar period. Because of the time limitation, they violate in part some of the criteria set up earlier in this paper for historical research in business cycles. Even a description of broad cyclical patterns, if it is to be useful in later analysis, requires more historical perspective, a more detailed breakdown of aggregates, and greater recognition of non-quantitative information than I have been able to present here. These criteria will be more strictly adhered to in the larger project to which I have referred.

³⁸ This subject is pursued further in the larger study referred to in this paper.

³⁹ The decline in production was roughly of the same order of magnitude in all three downswings, although the monthly rate of decline was considerably greater in 1937-38 than in the other two cases. In all three cases, about the same period elapsed before the level of the preceding peak was again reached. These comparisons are based upon a study of Babson's and the American Telephone and Telegraph indices, both unadjusted for trend.

THE ECONOMETRIC APPROACH TO BUSINESS FLUCTUATIONS*

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This paper will proceed from a historical description of successive stages in the development of the econometric approach to business cycle analysis to a brief discussion of some problems requiring further investigation.

Simple Theoretical Models

The historical origin of the approach can be placed in the construction of mathematical models embodying simple but logically complete business cycle theories. Examples are found in the following references: Frisch—Propagation problems and impulse problems in dynamic economics (*Essays in Honor of Gustav Cassel*, London, 1933); Kalecki—A macrodynamic theory of business cycles (*Econometrica*, 1935, pages 327-344); Tinbergen—Suggestions on quantitative business cycle theory (*Econometrica*, 1935, pages 241-308); Samuelson—Interactions between the multiplier analysis and the principle of acceleration (*Review of Economic Statistics*, 1939, pages 75-78).

The following are the main features of these models: (1) the main objective of the models is to serve as *theoretical exercises and experiments*; (2) the variables involved are *broad aggregates* like total consumption, total investment, price indices, etc.; (3) the models are *logically complete*, i.e., they consist of a number of equations equal to the number of variables whose course over time is to be explained; (4) the models are *dynamic* in that some of the equations connect variables with different timing or (as a limiting case) contain time-derivatives; (5) the models contain at most four kinds of equations, all of which we shall call *structural equations*: (a) *Identities*, i.e., equations valid by virtue of the definitions of the quantities involved, such as price \times quantity = value, savings = investments, etc.; (b) *institutional rules* such as reserve requirements, tax schedules; (c) *technological transformation functions*; (d) *behavior equations* representing the joint response of groups of individuals or firms to a common economic environment; examples are demand equations, supply or price-setting equations, profit distribution equation, etc.

The discussion of these models produced considerable clarification as compared with previous "literary" business cycle theories, especially in the following respects:

* This paper, along with the other papers of this session, will be included in Cowles Commission Paper, New Series, No. 35.

1. The literary theories were often found to be logically incomplete.
2. A sharper distinction was made between the mechanism by which cyclical movements are propagated, and the shocks and other external (exogenous) influences whereby cyclical movements are started or modified. For instance, in models employing a system of linear difference equations, it was found that the period and degree of damping of (each of) the cyclical movement(s) permitted by the equation system are determined by the numerical values of the parameters (coefficients and lags) of the structural equations, whereas the amplitude and phase of the cyclical movement (or of each cyclical component) at any given time are determined by initial conditions and by subsequent external (exogenous) influences, systematic or random. It was also realized that in many models turning points do not require specific explanation but come about as a result of the same relationships which describe other phases of cyclical movements.

3. It was found that a mere quantitative change in some behavior parameter could make the difference between a model responding to an external disturbance by a self-propagating cyclical movement and a model monotonically approaching an equilibrium level after each external disturbance.

The "narrowness" of some of the assumptions, like linearity of the equations, discrete integral time lags, etc., may be seen as a price paid temporarily for the sake of clarity and rigor—and well worth paying!

Discussion of Policies

Especially Tinbergen developed the use of these models for experimental discussion of the effects of business cycle policies, such as countercyclical public works, price stabilization, measures to reduce speculation, etc. His technique is to associate a given policy with a change in a certain direction in one or more coefficients in the equations, and to study the effect of such changes on the period and the degree of damping of the main cyclical movement permitted by the system. (Example: Tinbergen, "On the Theory of Business Cycle Control," *Econometrica*, 1938, pages 22-39.)

Statistical Measurement of Equation Systems

The realization of the crucial importance of the numerical values of the coefficients and time lags prompted attempts to estimate these parameters from statistical data, largely in the form of time series. This created a completeness requirement of a new sort, which we may call statistical completeness: for each behavior equation it was necessary to specify a sufficient number of relevant variables to give the residual disturbance a random character. This is a much heavier re-

quirement than logical completeness. A logically complete model can purposively disregard quantitatively important factors in the formation of economic decisions, and even omit important types of decision altogether, in order to concentrate on one particular model capable of propagating cyclical movements. A statistically complete model, in order to measure the influence of any particular factor at all, must estimate the effect of all quantitatively important factors. This leads to the introduction of additional explanatory variables, which, because of the requirement of logical completeness, require additional behavior equations (unless they are regarded as exogenous variables). Likewise, a statistically justified model needs to be more flexible in dealing with a complicated reality, than the "narrowness" of assumptions in the purely theoretical models permits.

EXAMPLES OF STUDIES OF THIS KIND

Author	Title	Country and Period	Type of Data	No. of Equations ¹
J. Tinbergen	<i>An Econometric Approach to Business Cycle Problems</i> , Paris, 1937.	Netherlands 1923-35	Annual	22
E. A. Radice	"A Dynamic Scheme for the British Trade Cycle," <i>Econometrica</i> , 1939, pages 47-56.	U.K. 1929-37	Annual	4
J. Tinbergen	<i>Business Cycles in the U.S.A.</i> , Geneva, 1939.	U.S.A. 1919-32	Annual	48
L. Klein	<i>Economic Fluctuations in the United States</i> , Cowles Commission Monograph No. 11, forthcoming. ²	U.S.A. 1921-41	Annual	16
Colin Clark	A System of Equations Explaining the U.S. Trade Cycle, 1921-41, manuscript.	U.S.A. 1921-41	Quarterly	6

Development of Statistical Methods

Tinbergen's statistical estimation procedures were essentially single-equation procedures based (implicitly) on the notion of one-way causation within a given behavior equation. The variable representing the response or decision of a group was taken as "dependent" variable in least squares estimation, the variables entering as factors in that decision as "independent" or (better) "determining" variables. However, this notion of a one-way street of causation exists only in the minds of the particular group taking the particular decision considered. For a considerable time econometricians (including myself) did not see that the simultaneous existence of many relationships calls for statistical procedures recognizing the simultaneous joint determination of all endogenous variables by the intersection of many behavior

¹ Including identities.

² See also L. Klein, "The Use of Econometric Models as a Guide to Policy," *Econometrica*, 1947, pp. 111-151.

schedules and other structural relationships. This point was brought out clearly in Haavelmo, "The Statistical Implications of Simultaneous Equations," *Econometrica*, 1943, pages 1-12.

As a result of this article, a revision of statistical methods has been undertaken, largely by various members of the Cowles Commission, to take into account the coexistence of all equations of a model. This revision has two main aspects, neither of which can be regarded as in any way completed: (a) a discussion of the identifiability of each structural equation or parameter; and (b) actual estimation procedures for those equations or parameters that are found identifiable.

To illustrate the concept of identifiability, let us consider a model specifying only linear equations, and specifying for each equation only the set of variables allowed to occur in it. Denote by S and V the set of all equations, and the set of all variables, respectively, specified by the model. Denote by E one particular structural equation, by V_E the variables allowed in it. The set $S - E$ of all other equations then contains the variables $V - V_E$ plus, in general, a set W_E consisting of those of the variables V_E that are common to E and $S - E$.

Equations	S	E	$S - E$
Variables	V	V_E	$V - V_E + W_E$

Now attempt to eliminate from the "other equations" $S - E$ the variables $V - V_E$ not occurring in E . This may or may not be possible, but if possible, this elimination produces at least one linear relationship E' between variables W_E all of which are allowed in E . It is clear that in this case no number of observations will permit estimation of the coefficients of the variables W_E in the equation E . Indeterminacy is produced by the existence of a second relationship between the same variables, this second relationship being implied by the other equations ($S - E$) of the model. This situation, recognized and discussed originally by Frisch,³ is now described by saying that the coefficients of variables W_E in E , and the equation E itself, are not identifiable. Criteria for identifiability in linear models have been developed.⁴

With respect to estimation problems (b) it seemed for a while as if the combined principles of logical and statistical completeness were becoming an obsession to those trying to compute estimates. It seemed that for consistent⁵ estimation of even a single behavior parameter, it

³ R. Frisch, *Statistical Confluence Analysis by Means of Complete Regression Systems* (Oslo, 1934).

⁴ The author has submitted for publication in *Econometrica* an expository article, "Identification Problems in Economic Model Construction," which contains full references to the original work on identification.

⁵ An estimate of a parameter is called consistent if, in the sampling distribution of the estimate, the probability of a deviation from the true value of the parameter larger than

would be necessary to devise and estimate a complete system of equations covering all aspects of the economy. However, more flexible estimation methods have now been developed by Anderson and Rubin,⁶ whereby it is, for instance, possible consistently to estimate a given structural equation while specifying only (1) the "dependent" variables occurring in that equation; (2) the "predetermined" variables occurring in that equation; (3) a number of other "predetermined" variables occurring in the remainder of the system, this number to be sufficient to ensure identifiability of the equation to be estimated. Here "predetermined" variables means either exogenous variables or lagged values of endogenous variables, and "dependent" variables means values of endogenous variables not subject to time lags.

This does not seem to be the minimum information necessary for consistent estimation, but it is the minimum amount for which satisfactory estimation methods have been worked out. Similar procedures have been devised by Rubin for simultaneous estimation of a subset of a complete set of equations. It is a general principle of these estimation methods based on incomplete specification of the model that estimates are both more accurate (in large samples) and more costly to compute, the greater the extent to which the entire model is (correctly) specified, with respect to the variables entering into each equation, and with respect to the functional form of the equations. The equations of Klein's model have all been estimated by the "limited information method" developed by Anderson and Rubin.

Nature of the Results

The expression "statistical testing of business cycle theories" has been used in connection with the construction of models. In one respect this expression claims too much, in another respect (as Klein has pointed out) it claims too little. The term "statistical screening of business cycle theories" would convey better that unique answers are often not obtained from the limited data available. The term "statistical construction of business cycle theories" would express better the contribution that work with the data makes to the formulation of hypotheses. But the latter term would fail to indicate the importance and indeed indispensability of hypotheses concerning economic behavior, which are not derived from the time series studied. "Business cycle theories statistically screened and inspired" seems the best single phrase to describe the nature of the results obtained or aimed for by econometric model construction.

some given amount (however small) tends to zero as the number of observations is increased indefinitely.

⁶H. Rubin and T. W. Anderson, "Estimation of the Parameters of a Single Equation in a Complete System of Stochastic Equations," *Annals of Mathematical Statistics*, March, 1949.

As a very simple example of the screening function of econometrics let us consider the well-known acceleration principle as an explanation of fluctuations in investment activity. This principle has been given a prominent role in theoretical models by Harrod,⁷ Samuelson (*loc. cit.*) and others. In its strict formulation the principle says that net investment fluctuates in such a manner that the stock of producers' goods is made to maintain a constant proportion to the total rate of production.⁸ This proposition has a strong appeal to the theorist, but its validity hinges on the implied assumption that productive capacity is at all times in substantially full use. By a simple comparison of time series of the rate of increase in production and the rate of investment, for some industries and for the whole economy of various countries, Tinbergen established⁹ that the correlation between these series is far from close, and, to the extent that it exists, the amplitude of the fluctuations in capacity increase is about half of that required by the strict acceleration principle. This result defeated any claim for the acceleration principle as indicating the main factor determining investment activity, and stimulated the formulation of alternative hypotheses, by which investment responds to profits or profit rates as the main basis of profit expectations.

As an example of a situation where the screening is inconclusive, let us place ourselves in the position of 1945 and consider the important question of the effect of liquid assets on consumption expenditure out of a given income. This question derives its importance from the circumstance that, since World War II, liquid assets held by consumers are much larger than they have previously been. But this very fact, combined with the circumstance that even at their lower level of interwar years liquid assets showed only moderate fluctuations around a smoothly rising trend, makes for a very wide margin of error in the statistical estimate of the response coefficient of consumption to liquid assets from interwar data;¹⁰ i.e., from the only data available in 1945.

In this example the statistical screening is inconclusive because a relevant variable has stepped far outside its previous range of variation. Other instances of inconclusiveness are met when a priori considerations admit to a given behavior equation a number of variables between which other relationships also exist. The discussion of identification

⁷ R. F. Harrod, *The Trade Cycle* (Oxford, 1936).

⁸ Many authors write here "rate of production of consumers' goods" instead of "total rate of production," but this is not even good theory, since a certain portion of the stock of producers' goods serves for the production of producers' goods.

⁹ J. Tinbergen, "Statistical Evidence on the Acceleration Principle," *Economica*, May, 1938.

¹⁰ See L. Klein, "The Use of Econometric Models as a Guide to Policy," *Econometrica*, 1947, pp. 111-151, especially pp. 22-23.

problems is designed to trace this type of indeterminacy systematically to its source. In such cases, the degree of indeterminacy in results can sometimes be diminished by the use of data other than time series (e.g., interview data, cross section data). Another possible device toward improvement of identifiability is disaggregation of a decision variable as a means of introducing explanatory factors specific to the decisions of smaller groups of economic agents. In the article referred to in footnote 4 I have commented on the use made of this device by Ezekiel¹¹ to obtain identifiability of the investment equation.

It cannot be held against the econometric approach, I believe, that in certain circumstances it may leave important questions unanswered. Its true calling is not to answer all questions. Rather, its task can be described as follows: (1) to formulate all relevant hypotheses to which the available data may conceivably make an answer possible; (2) to extract from those data all information bearing on those hypotheses; (3) to select from the set of competing hypotheses the one hypothesis best supported, or the set of those hypotheses equally well supported, by the data; (4) to evaluate in some way the degree of confidence which can be placed in the rejection of the hypotheses not so selected.

It may be added, as has often been pointed out, that the logical form of these hypotheses is often a conditional one, such as "given the occurrence of variables x^1 , x^2 , x^3 in a certain behavior equation" the hypothesis states that "variable x^4 does not influence the type of decisions involved."

The conditional form of these hypotheses leaves full scope for the use of general theoretical knowledge as well as incidental historical information. In fact, the quantitative measurement of general behavior patterns can be seen as a framework against which incidental departure from the pattern can be more easily perceived. For instance, how shall we determine from post-World War II data whether the higher volume of liquid assets has indeed stimulated consumption expenditure, if no estimate is available as to what consumption would be if the former degree of liquidity prevailed? In his paper, Professor Gordon mentioned, as a difficulty of the historical method, the problem of assigning relative weights to the various factors operative in a given historical situation. The econometric method estimates relative response coefficients representing the average weights with which various factors enter in a relationship during the whole of a certain period. A large unexplained residual found for a given year from such an analysis is evidence either that one of the factors has had considerably more (or

¹¹ M. Ezekiel, "Statistical Investigations of Saving, Consumption and Investment: II," *American Economic Review*, June, 1942, pp. 272-307.

less) than its average influence in that year, or that a special factor not generally operative has exerted considerable influence in that year. Thus incidental factors are found (unless two or more of them cancel each other's effects) by incidental failure of the econometric explanation. The econometric approach thus appears not as a competitor of the historical approach, but as an important instrument of it.

Problems for Further Investigation

Among the most important problems for further inquiry I would place what might be called the economics of model construction. The "output" of model construction is (conditional) knowledge concerning the behavior patterns of economic agents and the implications of these patterns for the dynamic properties of the economy as a whole. The "inputs" are efforts of research workers and resources devoted to data collection and computation. A choice between "methods of production" is involved in decisions regarding the degree of aggregation of variables as affecting the number of equations in the model, regarding the number of variables in each equation, regarding the functional form of the various equations, etc.

Models may either be "general-purpose" models, to extend our knowledge of the generation of business cycles, or models designed specifically to help answer a particular policy problem, such as assessing the effects of countercyclical tax policy. For a "specific-purpose" model, the choice of the various dimensions of the model is guided by a balancing of marginal cost against presumed added precision in answering the policy question raised. A somewhat systematic enumeration and description of policy problems that could be brought nearer solution by econometric models would therefore be a helpful guide to model-builders. Such an undertaking would have two aspects: the formulation of policy objectives (such as full employment with efficient use of resources) and the description of the main instruments of policy (such as tax schedules, social security rates, reserve requirements).

In the construction of a "general-purpose" model intuitive considerations necessarily have a larger role to play. But even here we meet the technical production problem of a balancing of two ways in which the quality of the "product" is affected by varying the dimensions of the model. Many criticisms of the econometric approach can in principle be met by further refinements of the model used. Change in behavior parameters can, for instance, be introduced by describing the mode of change by other parameters. But clearly, no model however detailed can claim to accommodate all relevant aspects of a complicated and changing reality. Suppose, however, for the sake of argument, that the specification of the model (i.e., the definition of each equation and of

the variables in it, the specification of the functional form of each equation, possibly including gradual change of its coefficients, the choice of the nature of the distribution of random elements, etc.) were our only problem, because some benevolent deity has undertaken to supply, for each such model that we may devise, those numerical values of the unknown coefficients and other parameters specified in the model, that most closely approximate reality. Then disaggregation and added detail would always be rewarded by added knowledge. In fact no such deity is operating, and the parameters of each model need to be estimated from observations spanning a finite time-period. A point may therefore be reached where the potential benefit from further detail is defeated by less accurate estimation of any given parameter.¹² Thus, for each body of data, there is such a thing as an optimum degree of detail,¹³ although we are far from knowing at which point, in various directions, this optimum degree is reached.

It is highly probable that the substitution of quarterly data for annual data would lead to improvements in knowledge well worth the added cost. As a preliminary step in that direction, the Cowles Commission is now investigating models permitting serially correlated random elements.¹⁴

It may be emphasized again that any results reached are conditional upon hypotheses not derived from or tested by the time series studied. Another important group of problems for further inquiry is the elaboration and consolidation of the theory of economic behavior of populations of individuals or firms under conditions of economic change and uncertainty. The econometric approach is not a substitute for theory, but one of the servants of theory.

¹² The mathematical reason for this effect is known as "loss of degrees of freedom in estimation."

¹³ That is, even without counting the research effort as a cost. The optimum will involve less detail if such costs are counted heavily, although I feel that, in view of the potential value to society of the added accuracy of results, such costs should not weigh heavily.

¹⁴ See the communications by H. Rubin and H. Chernoff in the session of the Institute of Mathematical Statistics of December 27, 1948, Cleveland, Ohio.

DISCUSSION

JAMES W. ANGELL: Professor Schumpeter has observed that "analyzing business cycles means neither more nor less than analyzing the economic process of the capitalist era."¹ Both of the papers just presented make important and constructive contributions to the solution of this problem of comprehensive analysis.

I have been asked to comment especially on Professor Gordon's paper, though I shall also venture a few more general observations presently. Professor Gordon's paper, as he points out, is a first progress report on the elaborate study of American business cycles in the interwar period, which he now has well under way. Examining it in much detail, either with respect to its obvious merits or with respect to points of possible controversy, might therefore be unfair, and in any event is debarred by limitations of time and space. I should, however, like to say something about certain general aspects of Professor Gordon's paper, which are revealed both in the list of unanswered questions which he poses, in his discussion of various alternative methods of going at the central problem, and in his preliminary conclusions on the interwar period.

First, Professor Gordon recognizes clearly the necessity for what he calls initial theorizing; that is, for setting up working hypotheses. But he does not indicate here what role this initial theorizing is to play in his own work. Nor does he suggest any set of "explanatory" hypotheses, or any more general body of business-cycle theory, which might form the initial theoretical structure of his own work and be tested by it. This is a serious apparent gap, but one which is doubtless explained by lack of time on the present occasion for any substantial statement.

Second, he is concerned throughout, not only with the cyclical elements of general business fluctuations, in a narrow sense of the term "cyclical," but also with longer-run or secular forces and movements, and with the interrelations between them and the cyclical elements. This line of approach seems *prima facie* reasonable and realistic. We can hardly hope to understand any one part of a complex phenomenon without some grasp of the thing as a whole. Moreover, it would be pointless to ignore possibly valuable information before its significance had been fully appraised; and in the early stages of a research study, it seems only common sense to avoid making any very rigid distinction between what may be thought in advance to be secular factors and those which may be thought to be cyclical. Yet this procedure—or, perhaps better, this point of view—raises a serious question as to how Professor Gordon really conceives of so-called "business cycles," and as to what his own initial hypotheses are with respect to the nature of the cyclical components of general economic fluctuations. Does he think of business cycles as really being economic entities, in some defensible sense of that term, corresponding to reasonably stable response and behavior patterns in the economy? Or are they simply the more or less fortuitous result of the fact

¹ Joseph A. Schumpeter, *Business Cycles* (1939), p. v.

that longer-run forces may vary from time to time in their strength, and they may operate somewhat irregularly? His view does not seem to me entirely clear. I will return to this problem of underlying conception a little later.

Third, he proposes to examine with great care the behavior, during cyclical fluctuations, not only of broad national aggregates, but also of the various major segments of the economy, especially at the turning points. As I interpret him, he will endeavor to construct explanations for each segment which at the outset are as far as possible internal to the particular segment itself. This latter procedure, too, is a way of trying to ensure that all potentially significant information is utilized. It is also a procedure which will be especially attractive to those who have a suspicion that many, if not most, major economic fluctuations somehow get started in or by particular parts of the economy rather than suddenly bursting out at many points simultaneously. The danger must not be ignored, however, that an essentially particularist rather than aggregative approach may blind one to the possible existence of explanations of widespread economic fluctuations which are both more generalized and also more significant.

Finally, Professor Gordon examines two of the methods by which other students have attacked the problem of empirical business-cycle analysis. These are the statistical approaches of the econometric group on the one hand and of the National Bureau of Economic Research on the other. Both are rejected, for a variety of specified reasons. Professor Gordon contends chiefly that the econometric account of what we may call the "causes" of cyclical fluctuations is thus far unconvincing. Although the correlations obtained are high, the variables used are so broad in character, are so extensively intercorrelated, and are so relatively few in number, that the apparent "explanations" might be equally consistent with a number of hypotheses other than (and perhaps partly inconsistent with) those specifically postulated. I think Professor Gordon does rather less than full justice to the so-called "econometric method," however. Even though substantial force be granted to his contentions, the very essence of scientific procedure surely consists in doing just what it, as well as various other methods, attempts; namely, formulating the best possible initial hypotheses relative to the problems set, testing these against the available data, revising the hypotheses where necessary, again testing, and so continuing on until the possibilities of the existing data and of available scientific imagination are exhausted.²

The National Bureau technique is rejected for what is in a sense the opposite reason—that in Professor Gordon's view it does not take us very

² The shortcomings of the results obtained by the econometric method to date arise at least in part from the incompleteness of the available data and in part from difficulties of statistical technique in handling substantial numbers of intercorrelated variables. In the end, however, they may also prove to be due in part to the very nature of economic behavior itself. It may turn out that those types of uniformity in terms of building blocks and of behavior patterns which have made progress possible in the natural sciences cannot be demonstrated in economic societies; and hence that economic behavior cannot be shown to have sufficient stability in a sufficient number of its important elements to permit many generalizations that are both accurate and valid over a period of time long enough to make them useful.

far in arriving at any explanation at all of the interwar period. Its emphasis on average or typical behavior entails ignoring what he regards as wide and significant differences among the probable causal relationships prevailing in different individual cycles. Moreover, he thinks it has yielded rather little, at least to date, in the way of explanatory generalizations; and its choice of the "short" cycle as the cyclical entity means that many of the results become inapplicable if the whole period 1921-33 is taken as the unit for study. Comment on these views, however, may properly be left to Professor Burns.

Professor Gordon therefore proposes to adopt, instead, what he calls the quantitative-historical approach, which he has just outlined, and which clearly presents a number of very attractive features. I shall not attempt here to appraise the detail of the proposed quantitative-historical approach. I am, however, much concerned about certain questions of general conception which are raised by Professor Gordon's outline of the method and of the way in which he wants to use it and, also, to some extent, by Dr. Koopmans' paper. These questions can be summarized in the single query, what is it that we are talking about when we discuss business cycles or what is it that we are trying to explain?

By this I do not mean, of course, to question the reality of the wide fluctuations which appear, recurrently if irregularly, in the general business activity of all advanced private-capitalistic societies. Nor do I mean to question the well-established fact that a number of important observable characteristics are common to virtually all the so-called "cycles" of such fluctuations in any one country, at least in recent decades. What I am driving at is the nature of the differing conceptions of what it is they are studying, and what it is they are trying to explain, which different students either state explicitly or imply by the character of the results they present.³ It seems to me that a good deal of current business cycle research has become so engrossed with individual trees that it has almost forgotten about the forest itself. At the risk of merely repeating the obvious, I should like to call attention to certain basic problems of conception, the answers to which—whether pro or con—current research perhaps takes too much for granted.

First, a question raised above: are the constellations of phenomena which we loosely call business cycles really economic entities, in some defensible sense of the term "entity"? If so, they must, of course, show some fairly stable array of observable characteristics. Moreover, if this observable array is to be regarded as the result of anything more than a series of historical accidents,⁴ the array must be the product of some reasonably stable set of

³ For a penetrating examination of the theoretical concepts lying behind two recent statistical investigations, see Edward Ames, "A Theoretical and Statistical Dilemma—The Contributions of Burns, Mitchell and Frickey to Business-Cycle Theory" (*Econometrica*, October, 1948). For a more general review of current ideas, see William Fellner, "Employment Theory and Business Cycles," in *A Survey of Contemporary Economics* (edited by Howard S. Ellis, 1948).

⁴ Or perhaps of a statistical illusion. Thus it is familiar that many irregular series of some size can be decomposed into any one of a number of sets of linear and/or wavelike components, with pleasingly small and neatly distributed residuals.

economic behavior patterns of human beings, acting either as individual consumers or as business managers or both. And these behavior patterns, which must be distinguishable from other sets of economic behavior patterns, must in turn be explainable either in terms of expectations and other subjective psychological considerations, of institutional rules, of technological transformation functions, or of some combination of these or similar factors. Professor Gordon's paper gives little indication of his views on these matters. Yet unless such economic mechanisms can be established and can reasonably be expected to produce economic fluctuations having all the principal characteristics of something we agree to call business cycles, it is clearly doubtful that the term "business cycles" should be used as relating to any economic entity in the real world.⁵

Second, if the trial hypothesis be adopted that business cycles *are* economic entities, then what puts them into motion? Are they essentially self-generating, given the general nature of modern business organization and perhaps some initial exogenous disturbance in the past; or do they represent in the main responses—presumably damping or even one-cycle in character—to a series of "shocks" which are external, in their own origins, to the factors and processes included in the phenomena of business cycles themselves; or is some combination of shocks and self-generating elements responsible? Neither Professor Gordon nor Dr. Koopmans indicates his own view. But here again the explicit and implicit answers to be found in the current general literature differ widely, and here again few if any of the initial hypotheses thus far set up have been at all adequately tested, or even stated in forms making clear that they *are* hypotheses to be tested.

Third, are the so-called "major" and "minor" cycles both results of essentially the same economic process, which sometimes manifests itself only in short or minor cycles but sometimes produces major ones as well; or are the two also fundamentally different, not only with respect to merely duration and amplitude, but also in a range of other major characteristics? Much of the current work, apart from that of Professor Schumpeter,⁶ seems rather to sidestep this problem.

Finally, must the explanation of business cycles which any one investigation finally arrives at also be capable of explaining the larger part of the total "reality" of a given set of general economic fluctuations? The dilemma here is familiar. If attention is focused primarily on individual cycles taken separately, as Professor Gordon is apparently doing at the outset, the explanation given for any one cycle is likely to gain in richness and convincingness. It will account for a larger part of the total phenomena of the selected time period. But then the danger also increases that the particular explana-

⁵ If this cannot be done, then any "business cycles" apparently suggested by statistical or other observational data must presumably be due either to a series of fortuitous circumstances or to short- and medium-term irregularities in the operation of the same forces that produce "secular" or "long-wave" movements. A variety of models, both literary and mathematical, which will produce cyclical fluctuations can be found in the literature, but their adequacy as explanations of the real world has yet to be satisfactorily established.

⁶ Schumpeter, *op. cit.*, pp. 161-175.

tion will lack generality and will not lead to any significant hypotheses relating to cycles at large. If, on the other hand, attention is focused on the factors common to all or many cycles, the opposite danger increases; namely, that the "generalizable" elements of explanation will in many cases constitute a relatively unimportant part of the total phenomena of any *one* cycle.⁷

I have tried above to state some though by no means all of the problems which arise over the basic conceptions with which investigators of business cycles necessarily start, whether consciously or not, and which they necessarily carry along in their work. Students differ in the answers they give or imply; and establishing such answers is, of course, a large part of the object of the game. I shall not attempt here to offer solutions of my own. I do, however, want to urge that these and other similar problems of underlying concept be recognized more explicitly than is often the case, and that the preliminary answers to them be themselves treated as vital hypotheses which it is of prime importance to test. One always has such hypotheses, anyway, whether consciously or not. If one embarks on what attempts to be an objective and unbiased process of collecting so-called "facts" but with unrecognized hypotheses which happen to be bad ones, the resulting collection of facts itself is also likely to be defective. It is likely to give inadequate or even wrong answers to certain questions and no answers at all to others that are even more important. The investigations which Professor Gordon, Dr. Koopmans, and their associates are now making should, however, carry us a long step forward toward satisfactory statements and solutions of these problems of fundamental concept.

ARTHUR F. BURNS: All students of business cycles owe a debt of gratitude to Professor Koopmans and to Professor Gordon for laying bare their approaches to the study of business cycles. Koopmans has sketched what he calls the econometric approach; Gordon has outlined what he calls the quantitative-historical approach. Both routes have been pictured attractively and persuasively by their authors, and I suspect that many members of this audience may now be struggling to decide whether it is best to follow the Muse of History or the Queen of Mathematics. An alert participant in the discussion might take advantage of this delicate uncertainty by staking out a claim for still another approach to the understanding of business cycles. I shall not succumb to this temptation. For I think that the paths being followed in business cycle research—whether by Koopmans, Gordon, or others—are not so far apart as may appear.

It is clear that both Gordon's and Koopmans' approaches are statistical, in the sense of involving extensive use of quantitative data. But this is not the only point of agreement. I notice that in listing the essential characteristics of the historical approach, Gordon notes that it may involve "a variety of statistical techniques—including econometric studies." In turn Koopmans observes that the econometric approach is not "a competitor of the historical

⁷ The econometric method, so far as it places weight on its "explanatory" variables, may run either risk!

approach, but . . . an important instrument of it." I notice, too, that both Koopmans and Gordon assign a strategic place to economic theory in their respective approaches. Gordon states that the historical method "entails initial theorizing—setting up working hypotheses," and that one of its essential characteristics is "full use . . . of qualitative as well as quantitative information." Koopmans likewise observes that the econometric technique is conditional upon initial theorizing; that it is "not a substitute for theory, but one of the servants of theory." If, therefore, I have understood our two authors correctly, the approach of each can be described as theoretical, statistical, historical, and mathematical. I might even add "psychological" to the list, for both Gordon and Koopmans confess to an "unseen hand" in their operations. Gordon notes that in the historical approach "causal inference depends upon personal interpretations and judgment"—to be sure, "after detailed examination of the available evidence." Koopmans is no less explicit. He tells us that "intuitive considerations" play a large role in setting up econometric models; and that while there is "an optimum degree of detail" in excursions of this type, "we are far from knowing at which point . . . this optimum . . . is reached"—which means, I take it, that matters of this sort must be resolved by personal interpretation and judgment.

As I see it, then, the methodological approaches of Gordon and Koopmans have much in common. Not only that, but both seem to be concerned primarily with business cycles in a brief segment of history—the period since World War I. They further agree in suggesting that their approaches—whether to the business cycles of this period or some other—will not necessarily yield a complete and final solution to the puzzle of business cycles. Koopmans asserts that the "true calling" of the econometric approach "is not to answer all questions," and "that in certain circumstances it may leave important questions unanswered." Gordon in his turn notes that in the historical approach it is frequently "impossible to arrive at convincing judgments regarding the actual magnitude of various forces which we may be able to isolate as probable causes of particular fluctuations"—which means, I take it, that in certain circumstances the historical approach may leave important questions unanswered.

Shall we conclude, then, that the approaches of the two authors may turn out in the long run to be very similar? I think that as far as the present evidence goes, this is an entirely permissible conclusion. Koopmans might begin, for example, by constructing a simple model with very few linear equations, estimating the parameters by using annual data. If the model yields unsatisfactory results, he might add additional equations by breaking down the endogenous variables of the system, or by shifting exogenous variables to the endogenous category, or by dipping into the random catchall for variables hitherto neglected. If the results are still unsatisfactory, he may substitute quarterly or monthly data for annual, or devise methods for handling nonlinear parameters, or modify the distributional hypothesis underlying the treatment of the random variance. If it should turn out in the meantime that the estimating techniques recently devised by the staff of the Cowles

Commission are in practice no better than the techniques used by a Schultz or a Tinbergen, Koopmans may abandon his criteria of simultaneous fitting and thereby win the freedom to work with a larger number of equations. If none of these devices help sufficiently, he might put historical boundary dates to the model, devise different models for different periods or cyclical phases, perhaps even experiment with a different model for each phase of each business cycle. If Koopmans should undergo this evolution, he would come very close indeed to Gordon's position—if the latter in the meantime stayed still. But I have no more reason for supposing that Gordon will remain still than that Koopmans would, and it is therefore equally possible that Gordon will come out at Koopmans' mathematical pole. If any here should think that what I am saying is fanciful, I can only plead that they may be relying on information outside the two papers before us—something I am scrupulously trying not to do.

The cold fact is that discussions of business cycle methodology, carried on in the abstract, are merely intellectual exercises in which experience, philosophical insight, and temperament mix in variable proportions. To appraise different methodological approaches responsibly, it is essential to scrutinize the actual findings or results to which the different approaches lead. The critical question is never whether a method is quantitative or qualitative, mathematical or historical, elegant or pedestrian, theoretical or statistical. In 1913 Wesley Mitchell's *Business Cycles* appeared; one year later Henry L. Moore's *Economic Cycles* was published. Mitchell used no special apparatus apart from ordinary charts and tables, but that did not prevent his reaching generalizations about the cyclical process of economic life that stood up well in the next generation. At the same time, Moore's elaborate mathematical techniques did not prevent his results from being discredited by later research. It is possible to cite illustrations of an opposite tenor, but they would only reinforce my point, which is simply that the merits of a technique cannot be judged in the abstract. The purely personal element in the scientific process is sometimes more important than anything else. A method that yields reliable results in the hands of one investigator may produce nightmares when tried by another investigator of comparable intellectual stature.

The important question about business cycle methodology, or for that matter any other body of techniques in economics, is simply whether it does or does not lead to dependable answers to significant questions. Unhappily, this pragmatic test can hardly be applied to the papers presented at this meeting, since both Gordon and Koopmans are still in the early stages of their research. It would be manifestly improper to use the tiny samples of results that the two investigators have put before us as a basis for appraising the merits of their approaches to the vast problem of how business cycles are generated. If a pragmatic criterion is to be applied at all, we must restrict ourselves to the issues underlying the particular results illustrated by Gordon and Koopmans. What I have to say on this subject must be brief.

Koopmans has cited two illustrations of results yielded by the econometric

technique. One relates to the influence of liquid assets on consumer outlay, and here he tells us that the econometric approach has failed to yield a definite conclusion. Gordon has not taken up this complicated subject, but I do not think I am being reckless in asserting that the historical approach is capable of yielding a similar result. Koopmans' second illustration is Tinbergen's negative verdict on the acceleration principle as an explanation of fluctuations in investment. Since Gordon has not discussed this subject, a direct comparison is again impossible. But I can testify that the National Bureau of Economic Research has reached results similar to Tinbergen's, indeed of larger scope, by using an approach that is similar to Gordon's. Furthermore, if the validity of the acceleration principle really hinged, as Koopmans states it does, "on the implied assumption that productive capacity is at all times in substantially full use," then anyone who had doubts on this issue could bring the acceleration principle to a critical test merely by examining some statistics on the degree of utilization of productive capacity—a procedure so simple and straightforward that there is no need to dignify it by any special name. Finally, while I can readily agree that the acceleration principle misrepresents the play of forces on investment in the short run, it seems to me that Koopmans overlooks an important point; namely, that the acceleration principle is sometimes the key to movements of investment over long periods.

Let us turn next to the illustrations cited by Gordon of the results yielded by his approach. To me the most interesting finding is that a severe depression seems to have been followed as a rule by a "submerged" cycle, but I doubt if this suggestion will stand up under critical examination. Gordon's sketch of the cyclical contours of the interwar period I can confirm in large part, though I cannot accept some of the detailed findings. I find it difficult, for example, to square the conclusion that the depression of 1920-21 "led to only the most temporary impairment of the business community's 'propensity to invest'" with a drop of 67 per cent between October, 1919, and December, 1920, in the floor space represented by construction contracts, or with a drop of 91 per cent in machine tool orders between January, 1920, and September, 1921. At this point, as at some others, I think that Gordon has been misled by using annual data on investment expenditures instead of monthly data on investment undertakings. But I do not wish to press criticism along these lines or even to note Gordon's omissions. He has put his results tentatively and with great candor, and I have confidence that his historical sketch will vastly improve as the investigation progresses. I find it essential, however, to observe that Gordon's illustrative results deal largely with the magnitude of certain ups and downs, in contrast to Koopmans' illustrations which deal with questions of causation. As things stand, the number of variables handled by Gordon is small and well within the econometrician's range even if the latter worked mechanically, which of course he need not do. I fail to see why the kind of economic history Gordon has sketched could not also be written, if someone thought it worth while to take the trouble, in mathematical curves with explicit equations; though it is only proper to add that some of the

questions raised by Gordon have no obvious mathematical equivalent.

This is about as far, I think, as a pragmatic test applied to the papers by Gordon and Koopmans can take us. If we are to go further in appraising their methodological approaches, we must revert to speculations. It seems reasonable to suppose that if Gordon and Koopmans persist in their present emphases, their results will be cast in different forms—one mathematical, the other literary. That may impede understanding for a time, but economists have become inured to this sort of inconvenience. Even the nonmathematical literature of economics does not lack identical theories expressed in different idioms, to say nothing of different theories expressed in identical words. Thus economist A may assert that, *ceteris paribus*, demand is a monotonically decreasing function of price, while B states that under stable conditions demand increases as price diminishes. Or economist A may claim that in a competitive market the rate of interest equilibrates the amount of money that households and firms seek to hold with the amount of money in existence—i.e., the amount they do hold—while B asserts that the rate of interest equates the demand for money loans with the supply. Again, economist A may asseverate that if intended investment exceeds the propensity to save, the national income expressed in a wage unit is to the left of its equilibrium position and will therefore rise to its equilibrium value, while B may assert that if the aggregate profits of business firms exceed expectations, they will tend to increase their working forces. Thus the extraordinary richness of the English language has brought its joys and embarrassments. I think that Koopmans and Gordon may at least take comfort in the thought that, if it should turn out that they impose a linguistic ordeal upon one another and upon the rest of us, they may do so in no greater degree than have economists conversing in different varieties of English.

Of course, it is possible—perhaps even likely—that Koopmans will present us with a single, comprehensive generalization, while Gordon will end up with as many or more generalizations than the number of business cycles he covers. But this outcome need not mean that their results will be contradictory. To the extent that Gordon tracks down variables treated as exogenous in the econometric model or secreted in its random variances, his work might prove complementary to Koopmans'. To the extent that Gordon neglects the common features of business cycles, Koopmans' work might prove complementary to Gordon's. Furthermore, I take it as a matter of course that, although Gordon is now chiefly concerned with the features that differentiate business cycles rather than with the features they have in common, he is intensely interested in the latter and will go as far as he can to account for them. I therefore see a basis for hope that Koopmans' and Gordon's results may prove not merely complementary, but actually confirm one another.

In any event, we may look forward eagerly to what they turn up. I anticipate a stimulating account of the interwar period from Gordon's pen. While there is a greater continuity in business-cycle experience before and after World War I than many students realize, there can be little doubt that certain structural changes in world economy did occur around that time.

The period surely deserves intensive study, especially if the background of earlier business cycles is not neglected. Between the 1870's and 1914 the fluctuations of economic activity in the leading commercial nations of the world—Great Britain, Germany, France, and the United States—moved in unison, except for the fact that American experience was occasionally diversified by extra cycles. After 1919 the business cycles of different countries tended to drift apart, though practically all shared in the catastrophic contraction of 1929-32. There can be little doubt that the international gold standard tied together the business fortunes of different nations before World War I, and that monetary individualism is imprinted on the divergent business fluctuations of different countries in later years. The United States emerged as an international creditor after the war, and both foreign lending and foreign trade assumed a new significance in our economy. Exports, which conformed poorly to business cycles before 1914, later fell into step with business cycles. Perhaps the most dramatic evidence of the economic unity of the period 1921-33, which Gordon has described as a major cycle, is to be found in our record of foreign lending. Up to about 1925 the volume of foreign loans placed in this country was substantial. Yet the loans were on the whole of sound quality, as attested by later experience. The rest of the decade witnessed a further expansion in the volume of foreign loans, and a very sharp deterioration of their quality.¹ The speculative craze was not confined to foreign bonds, but expressed itself also in the real estate and stock markets. Consumer credit shared mightily in the upsurge, the largest part being devoted to the purchase of durable consumer goods. For decades before the outbreak of World War I the share of consumer durables in the total value of finished commodities had fluctuated around an average of about 10 per cent. In the twenties the percentage doubled, and this swift and momentous change in the nation's consumption habits brought a new element of potential instability to our system.

These and a thousand related facts will emerge from Gordon's study. I expect that he will make the business cycles of the interwar period stand out as individuals, without pushing the interpretation of particular events farther than the intrinsic complexity of individual experience or the quality of available records will allow. I look forward to an integrated interpretation that will test current understanding of the twenties and thirties—a period that is decisive in any attempt to form a reasoned judgment of the economic outlook over the next decade. But I think that if Gordon is to accomplish what fully lies within his power, he needs a more definite framework of analysis than he has presented. His marshalling of evidence on the major cycle of 1921-33 may, perhaps, be facilitated by following financial accounts side by side with national income accounts, and watching the shifts from one form of speculation to another, as well as the changing proportions between the speculative and industrial activities.

It is more difficult for me to appraise the prospects of Koopmans' investigation than of Gordon's. The attempt to describe the essential workings

¹ See a forthcoming study by Ilse Mintz.

of the economic system in a comparatively small number of equations is a new and magnificent conception. Whether the attempt will prove successful, I have no way of knowing. I think, however, that the chances of success will be improved if econometricians note carefully the results of systematic factual studies of cyclical behavior such as Abramovitz' on inventories and Hultgren's on cost-price relations. I think, too, that the econometricians' work would be improved if they made an explicit effort to wrestle with the historical problem of marking off the boundary dates to which their models are supposed to apply. I think that further theoretical and statistical work on short-run versus long-run economic functions is seriously needed, and that the econometricians should experiment with timing relations that shift systematically over the course of a business cycle—a matter I believe I can demonstrate is of some importance. I think, finally, that econometricians might benefit from better record keeping. General econometric models are barely a decade old, but simpler models go back to Moore and embrace a generation of research in agricultural economics. As far as I have been able to discover, no one is now keeping a reasonably full record of how well or how badly the many different models constructed by econometricians have worked or are working. Such a record would serve as a measure of progress, and at the same time provide an instrument that might effectively hasten progress. Imagine a file kept for each model, excluding of course those that seem too absurd to follow or those that have turned out badly, for, let us say, a dozen consecutive years. Once a year a trained analyst would go through the files and see how well the prediction for an additional year compares with the observed figure. Each year he would prepare an analysis for publication, classifying the errors of the various models according to the type of equation used, the method of estimating its parameters, the period covered by the model, the economic terms it includes, and so on. Such an analysis would aim to segregate the factors in econometric model building that seem to promote success from those that promote failure, and thus pave the way for improvements in the technique. I devoutly hope that someone will undertake this arduous but necessary task of scientific verification and accounting.

If what I have said is not too wide of the mark, both Gordon and Koopmans are engaged in empirical investigations of high importance. True, neither author has as yet specified the economic theory that guides him, or listed the variables on which he deems it desirable to concentrate, or commented on the quality of the available statistics or other information bearing on his study, or discussed the influence that any of these matters has had or may have on his methodological approach. But I infer from these silences, as I do from the soul searching in which each has engaged and from the points of agreement between them that I noted in my opening remarks, that the approaches of our two investigators are still fluid. This fact promises well for their inquiries. Experimentation is essential in the present state of our knowledge of business cycles, and I see in the experimental cast of mind of our two investigators the best of reasons for expecting that their researches will prosper.

GOTTFRIED HABERLER: I confess that I found reading of the two main papers a rather depressing experience. Professor Gordon starts his contribution by formulating questions concerning the interwar period to which we have no satisfactory answer. These questions are so numerous and broad that they cover almost everything one would like to know about cyclical movements of the interwar period. It would seem to follow that our knowledge of the business cycle is identically equal to zero! I like to suggest, however, that this impression is to some extent the result of an optical illusion. If Dr. Gordon had formulated his questions a little more precisely and if he had had the time to supplement the list of open questions by a list of questions on which there is substantial agreement, the picture would have been less depressing.

The gloom emanating from Dr. Gordon's paper is hardly dispelled by Dr. Koopmans' contribution. He tells us that the econometric approach to business cycle research which he champions has just undergone a radical revision. This revision, he says, cannot yet be regarded as completed. I admit that I feel a little like a babe in the woods when confronted with the latest intricacies of the Cowles Commission approach. The fact that an authority in the field of mathematical statistics like Professor E. B. Wilson feels somewhat mystified¹ makes me a little less ashamed than I otherwise would be.

Dr. Koopmans cites one example of the type of problems that can be solved by means of the Cowles Commission method. It cannot be said that this example is calculated to inspire much confidence. Surely to refute the acceleration principle in its simplest form by means of the econometric apparatus is like constructing an atom bomb for the purpose of killing a mouse, which if not still-born has been killed so long ago that its body is by now in an advanced stage of decomposition!

Appropriately enough, research in the field of business cycles seems to move in cycles—or should we say in fashions? Once upon a time all sorts of business barometers were *en vogue*. The Harvard barometer was one of the best known, and it was copied, with more or less important modifications, by many other services in the United States and abroad.

This type of approach has been completely abandoned. It is completely discredited although it would be ungrateful and unjust not to recognize that business cycle research has been permanently enriched by Persons and his Harvard collaborators through the collection of data as well as the development of methods of time series analysis.

The econometric approach of the Cowles Commission seems to be petering out rapidly or not to be getting anywhere beyond extensive methodological discussions.

What we might call the consumption function approach which grew up on the basis of a crude, oversimplified Keynesianism, was very popular during the war and the immediate postwar period. It produced a large number of gloomy forecasts of an immediate postwar depression and has been entirely discredited by the complete failure of these forecasts. Although this type of

¹ See his review of Haavelmo's *The Probability Approach to Econometrics* in the *Review of Economic Statistics*, Vol. 28, 1946, p. 143.

analysis marked a backward step in business cycle research, it left behind a sediment which probably constitutes a permanent enrichment of our economic knowledge.

What has become known as the National Bureau technique of analyzing business cycles, embodied in the imposing work, *Measuring Business Cycles*, by Mitchell and Burns, had rather rough sailing recently. It has been severely criticized by a long list of impatient though competent reviewers such as Hurwicz, Koopmans, Lerner, and Metzler. Still it seems to have greater staying power than the other approaches mentioned, partly at the expense of extreme caution and unperturbable silence on many burning issues.

Frickey's ingenious and highly original approach is largely descriptive. He does not go far in answering questions in which theorists of business cycle policy are interested. But as far as he goes, he puts firm ground under our feet.

Professor Leontief's input-output analysis is the *dernier cri* in the field of quantitative over-all economic analysis. It has become a tremendous success in the sense of being widely adopted and imitated and crowding out to a considerable extent some of the other approaches mentioned. It is primarily long-run structural analysis rather than dynamic business cycle analysis. But it certainly harbors possibilities for business cycle analysis proper. Will it share the fate of the other types of analysis which were just as popular at one time or another? It is too early to give even a tentative answer to this question.

Professor Gordon in his paper proposes a quantitative-historical approach. That approach has at least this to be said in its favor that it is not new but well tried. After all, the method of many of the classical writings on the business cycle may be described as quantitative-historical analysis. Juglar, Aftalion, Mitchell, Pigou, Robertson, Schumpeter—none of them was satisfied with pure theory or nonquantitative description; nor did they confine themselves to the utilization of statistical series, but made full use of non-quantifiable or not yet quantified historical knowledge.

Not only quantitative business cycle research but also the pure theory of the business cycle is in a rather unsatisfactory state. To be sure, great progress has been made during the last twenty years or so. Our stock of cyclical models (theories) has been much enlarged. In fact, it is embarrassingly large! It has become too easy to construct cyclical models. Every sophomore is being taught how to produce any kind of cycles. Give him a couple of lags and initial conditions and he will construct systems which display regular, damped, or explosive oscillations, or exponential movements up or down, as desired. However, the more models we have, the less we seem to know of the real business cycle.

The explicit and systematic introduction of expectations and anticipations has unavoidably complicated things enormously. It marks the passing of the mechanical age in business cycle theory.²

²I cannot help feeling that Dr. Gordon's queries and strictures are frequently drawn up in a somewhat too mechanical spirit. He wishes to "see" or almost to "touch" the forces which cause business activity to fluctuate in cycles.

What conclusions shall we draw from this state of affairs? Surely we cannot return to the good old days twenty-five years ago; we cannot retrieve the mechanical age. The human mind cannot unlearn what it has once mastered. We simply cannot forget or ignore the many possibilities of generating cyclical fluctuations which we have been taught by recent model builders. We can only sift them, and reject many as unrealistic, on the basis of empirical (which is by no means purely statistical) evidence. This is inevitably a laborious and time consuming process which does not hold out hope for reaching rapidly startling and unambiguous results.

But, as I said before, I do not believe that the area of disagreement is quite so large and our knowledge of the nature and causes of the business cycle quite so small as one is led to assume by reading the papers of Professor Gordon and Dr. Koopmans. The fact that there is a considerable amount of agreement on how to mitigate depressions seems to point in that direction. Or is it possible to know something about the cures without knowing anything about the causes? It might be said that in medicine it frequently happens that a cure is known while the cause of the disease or the way through which the medicine works is still a complete mystery.

However, the analogy with medicine is hardly valid. Medicine being a highly experimental science, it is often possible to find cures by purely experimental methods, by trying out hundreds of compounds until a potent drug is discovered. The economist is not in a position to do that. He must wait for history and politics to make experiments for him.³ Unfortunately, history or governments do not make experiments for scientific purposes. Hence conditions are never quite as "pure" as the economist would like them to be. Nor would that be possible, even if a curious dictator wanted to frame his policies with a view to discovering economic laws. For an economic system which is experimented with may behave rather differently than one which is let alone. Just think of possible anticipations. Experimentation in the large, with the system as a whole—and the business cycle involves the system as a whole and requires wholesale experimentation—is a different matter than experimentation in the small.⁴

If there is, then, a certain amount of agreement on depression policies, it must be based on some agreement concerning the nature and immediate causes of depression. This does not mean that these hypotheses (theories) cannot or need not be subjected to empirical tests. But it is probably safe to say that no depression policy has ever been agreed upon, let alone discovered, by experimentation (even if the word experimentation is taken in the broad sense of watching the experiments of history and policy).

What is it, then, that might be regarded as the area of agreement in our

³Of course, the difference between experimental and nonexperimental sciences must not be exaggerated. It is a difference in degree only and an anti-empiristic, aprioristic methodology of economics (or any other science) cannot be based on the fact that it is impossible to make laboratory experiments with the economy (or society) as a whole.

⁴In this respect again there is only a difference in degree between economics on the one hand and the natural sciences on the other. It has been often observed that in experimenting with nature, natural conditions are changed. Mere observation may influence the course of events and thus fail to reveal exactly what happens in an unobserved world.

field? No one of the existing general, full-fledged theories of "the business cycle" is entirely acceptable, and it is extremely doubtful whether it is sensible to look for such a solution. Is it at all plausible that all recorded cycles or even those within some restricted period, say the second half of the nineteenth and the first decade of the twentieth century, a period which may be regarded institutionally fairly homogeneous, must be explicable in terms of the same theory, be it one of the modern precisely stated models or of a somewhat looser type, as for example Professor Schumpeter's theory? My answer is no. At any rate, we should not start with such a preconception. The hypotheses on which many economists agree, often implicitly and without stating them precisely, and on which agreement might be reached and which should be looked for, seem to me of much more pedestrian nature: First, it is an interesting and suggestive fact that there is so much agreement on dating cyclical fluctuations. Cyclical calendars of investigators of so different background and approach as Mitchell, Robertson, Spiethoff, Pigou, Schumpeter, Frickey and Slichter, to mention only a few, coincide extremely well. The broad characteristics of the short cycle are practically the same for all these writers—fluctuations in output *and* prices, etc. (With respect to the so-called "long waves," there is much less agreement as to dates and characteristics.) Is it too much to say that there is also agreement that fluctuations in the aggregate flow of expenditures is the *proximate* cause of fluctuations in output, employment, and prices? To be sure, that is not necessarily the case. (If it were, the proposition would be reduced to a useless tautology.) It may be possible to find exceptions for particular industries, but for the fluctuations of business as a whole it seems to be fairly generally accepted.

Moreover, that investment expenditure fluctuates more than consumption, durable goods more than perishable ones, industrial output more than agricultural output, while industrial prices are stabler than agricultural prices, is well established and, I think, generally accepted.

We know fairly well, certainly much better than, say, twenty-five years ago, how all sorts of changes in the data affect upswing and downswing; for example, that changes in the propensity to save, government deficits or surpluses, changes in credit policies and interest rates, export or import changes, exert expansionary or deflationary effects is reasonably certain, although the intensity and hence the practical importance of some of these factors either in general or in particular cases is often a matter of doubt and dispute.

These types of hypotheses (theories) ought to be more fully exploited and utilized by empirical business cycle investigators. If the National Bureau is criticized for its lack of theory, the charge seems to me groundless or justified according to what is understood by "theory." Mitchell and his collaborators were right, in my opinion, in their refusal to start out, even if it were only tentatively and subject to later confirmation or rejection, from any one of the current models or theories of the cycle as a whole. But a fuller utilization of the more modest theoretical propositions indicated above would give their work a more useful direction. Moreover, the substitution for the vague and elusive concept of a "reference cycle" of the meaningful and

INTERREGIONAL VARIATIONS IN ECONOMIC FLUCTUATIONS

THE REGION AS AN ECONOMIC ENTITY AND CERTAIN VARIATIONS TO BE OBSERVED IN THE STUDY OF SYSTEMS OF REGIONS

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In the study of economic aggregates for national economies we proceed, in effect, upon the basis of a notion of a "structure of production" for which we can provide illustrations in the form of block diagrams, indicating the "stages of production," and flow charts, representing the flow of output from stage to stage. We purport to measure the quantity or the rate of change of the flows at the different stages; and in some of the more important phases of the work, research workers have sought to approach nearer to a quantitative understanding of the "concatenation of industrial processes" by comparing the movements of various series representing the activity at the different stages. Interdependency between the rates of flow from the various industries and to the various users implies an idea of a "balance" of a sort—a national economic system being regarded as bearing "the character of a comprehensive, balanced mechanical process."¹

In consideration of international trade a spatial dimension is explicitly introduced into this conception of "economic structure." There comes to mind the crucial debate currently being waged over the interpretation of the extreme difficulty some areas in the world are experiencing in their efforts to get and hold hard currency and of the ease with which this is being done in other areas. The picture that is conveyed in the views set forth in this debate presents another figure of speech, but to the block-diagram idea of a sequence of production stages there is added an element of space. In broad outline, the concrete picture implied in this discussion would seem to be that of a great area divided into an irregular patchwork of subareas, each characterized by some form and substance that in some respects provides an analogy with the structure of a biological entity, a type of population system.² Lines of union along which matter and energy flow connect these subareas into some kind of functioning system of entities. An observer high above the earth might look down and see in their

¹ Thorstein Veblen, *The Theory of Business Enterprise* (New York: Charles Scribner's Sons, 1904), pp. 14-17, 25-27, 180-182.

² For a discussion of population system as a basic biologic entity see A. E. Emerson, "Why Termites?" *Scientific Monthly*, April, 1947.

concrete forms these flows of objects along the lines of passage. To the notion of "balance" between flows from industries or from stages of production there is added another component—an equilibrium or balance with respect to the system of spatial flows. The state of affairs that is conceived of as a balance or equilibrium has of course only a virtual existence and not an existence in fact; and our observer at present would apparently sense an extraordinary lack of balance in the international system of commodity and financial flows.

It is my thesis that we should explicitly introduce a spatial dimension into our conception of the economic structure of the nation. These flow characteristics are not peculiar to an international economy, and dynamic features of a system of flows—the phases of "disequilibrium" through which a system passes in its aggregate rise and fall—are implicit in regional change at varying rates. I propose to experiment with an approach to a study of trade fluctuations that represents essentially a mercantilist point of view. I shall regard as a unit of study and a fundamental entity not the "industry" per se but rather the "economic community"—and the challenge is to discover the structural features and the operational characteristics of this entity. A community seems to be organized around its "export" industry, this being the source of the flows which this community injects into the larger interdependent system and which act as a balance for the flows diverted from the larger system and channeled into this community. Emphasis will be placed upon these export industries as connecting links—links between, not nations as such, but population structures or concentrations. The activity of given sets of firms is to be regarded as tied in with the national (and international) economy by being integrated with respect to a group of population structures—in some cases to a single population concentration and in others for all population concentrations within the general interrelated system of population structures.

My objective in what follows is to develop some of these ideas, and we shall discuss: first, an extended conception of economic structure involving a spatial dimension; second, the construction of arithmetic models illustrating the variation of magnitudes reflecting the functioning of the economic structure; and third, certain descriptive statistics illustrating the evolution of economic change within a great interdependent system of economic communities.

I

As a background for the specification of the structural model corresponding to an economic system, we may call attention to the mite of evidence that is said to exist of the structural features of human population systems. I am no specialist in population analysis and thus

no judge of the evidence to which I refer. But the idea suggests a quite interesting background for a notion of economic region. There is supposed to be an empirical relation known as the rank-size rule for a system of cities, by which one may infer the size of a given city from a knowledge of the size of the largest city and the rank in size of the given city.³ In the presentations of this relation, what constitutes a system of cities, or even what constitutes a city, is not made clear. Sometimes the cities of a nation constitute the system, as for the United States. At other times the cities of a continent must be included in order that the relation may apply. But it apparently is widely applicable—for all censuses and for the various geographical “systems” of cities.

This rank-size rule is in fact a cumulative frequency distribution and carries at least the suggestion of an element of orderliness. The size of a city is not independent of the entire distribution of city sizes, and as the system of cities expands in size, the size distribution maintains an order. While individual population “clusters” have individual growth histories—rates of growth varying and even differing in sign—orderliness within the aggregate prevails. The rank-size rule for a

³ Cf. John Q. Stewart, “Empirical Mathematical Rules Concerning the Distribution and Equilibrium of Population,” *Geographical Review*, July, 1947, pp. 461-485.

This empirical relation is $R^aS = M$, where R is the rank of a city with respect to population for a given system of cities, where S is the city's population, where M is the size of the largest city, and where a is a constant. For the United States, a may be taken as unity so that the size, say, of the twentieth largest city should be approximately one-twentieth of the size of New York. The rule apparently holds remarkably well for every census, 1790 to date. No rationalization, so far as I know, has been given for the form of this empirical relation. The size distribution of cities is of course a wildly skewed distribution, and a “fit” of a sort presumably would be obtained by simply choosing some relation that strongly telescopes the scales on the two co-ordinate axes.

There appears to be material here for an interesting speculative study—the development of the expected distribution of city sizes as a modified chance distribution. For example, suppose that there is an empty continent or area that has been subdivided into small areas each of which is a possible location for a population concentration. Then suppose we allow a process of population growth and distribution among the possible subdivisions—the population growing to n families to be distributed over N locations, in a way analogous to the distribution of n balls among N pigeon holes. At the beginning suppose that the chance of a ball falling in a given pigeon hole is the same as that for its falling in any other hole, but that these chances alter as the distribution process continues, the chance of any pigeon hole receiving a ball being not independent of the number of balls already lodged in it. This hypothesis would represent one case, and there is, I believe, a published solution for it, but this solution that I have in mind would be practicably very, or impossibly, troublesome to apply. Cf. Major Greenwood and G. U. Yule, “An Inquiry into the Nature of Frequency Distributions Representative of Multiple Happenings,” *Journal of the Royal Statistical Society*, March, 1920, pp. 25-263, from which the preceding description of the case will be recognized as a paraphrase. Another case would be one mentioned in this reference—the pigeon holes from the beginning being divisible into subgroups for each of which the chance is different but constant throughout. In our situation both factors would be jointly involved. One who is familiar with the literature may know of treatments of such cases leading to practicable solutions. Classical treatments of this general type of problem may be found in: Ethel M. Newbold, “Practical Applications of the Statistics of Repeated Events,” *ibid.*, Part III, 1927, pp. 487-535; Major Greenwood, *Journal of Hygiene*, Vol. 31, pp. 336-351, and *Journal of the Royal Statistical Society*, Part II, 1946, pp. 85-111.

system of cities is also a relation between the size of the largest city and the number of cities of a size greater than some lowest value. Further evidence is presented suggesting a relation between the number of cities or population clusters and the size of the population living within the system but outside the clusters.⁴ Altogether, one gets the impression of mass regularity. As a population system expands and existing clusters on the whole grow larger, new clusters of population crystallize and the population living outside the urban bounds maintains a numerical relation with that within these concentrations.

But in addition to the numerical aspect of regularity, in the spacing of these population clusters there seems to be a quite suggestive uniformity. If one strikes out in any direction along a highway or other line of union, with rough regularity a sizable population concentration is encountered in which typical functions are performed not found in the smaller subsidiary groupings of population spaced about it. Outside the densely populated, industrial areas, the pattern seems fairly clear—a nucleus population cluster with smaller subsidiary villages about it, all set down in a rural medium.

It is this grouping of a nucleus with its subsidiaries and rural medium that I look upon as a primary unit, and I conceive of a half-dozen or so such primary units dispersed about a common special center in which certain unique functions are performed.⁵ A system of population cluster patterns does not, however, consist of a simple aggregate of quasi-autonomous nets of units of this sort. Rather, nets of areas are grouped into higher order nets, each with a population cluster as a nucleus, and so on to a prime population concentration which is the central nucleus of a hierarchical system of population clusters.

The region, then, is the area including this primary unit, and it corresponds approximately with the familiar primary trade area.⁶ To sharpen the notion, let us suppose that all "exports" and "imports" of such a unit are channeled through the population cluster and that all money funds of the occupants of the region are held in banks located in this center. Say that consumers invariably buy from local retailers who in turn invariably obtain their stocks through distributive agents maintained in the center. If we were to think in terms of second order nets, we would suppose that the wholesalers of the primary region do not deal directly with the agents of just any trade center but only with commission houses, brokers, and the like located in a particular

⁴ John Q. Stewart, *op. cit.*, pp. 468-471.

⁵ Cf. "The Region as a Concept in Business Cycle Analysis," *Econometrica*, July, 1946, pp. 201-218.

⁶ Cf. "Location of Industry and Regional Patterns of Business Cycle Behavior," *Econometrica*, January, 1946.

and nearby population center. The net of primary trade areas served by a single wholesaling center approximates the familiar "wholesale trade area." While this construction is an abstraction, it bears some resemblance to an observable trade structure.

Within a primary regional unit we shall say that a part of the employment produces products and services sold only or primarily to the inhabitants of this region. This employment is termed the "residential" or "passive" employment, and the demand for this employment varies with the aggregate income of the region. The rest of the employment produces primarily for export to other regions. This employment is called the "primary" or "active" employment, and occupations statistics indicate that this class typically accounts for from about 25 per cent to 45 per cent of the total employment of a region. The demand for this part of the employment of a region varies with the income within the regions in which the active products are sold. Over wide expanses of the nation, where regional structure is relatively simple, it appears to be true that the respective active products of such regions are small in number, and it is in this sense that we may speak of the economic homogeneity of these primary regions that does not typically characterize the economic structure of the "wholesale area."

II

The above purports to describe certain features of a hypothetical system of population structures. While empirical work upon regional variation of economic magnitudes may of course be undertaken without an explicit account of the spatial structure of an economic system, I think it helps to set forth tentatively a description of the "thing" we conceive of as generating the variation that is the subject of study. To proceed a step further in this hypothetical outline, I have attempted to illustrate how, in my present view, these population structures are tied together into an interdependent economic system. For this purpose, a four-region arithmetic model was constructed capable of generating a number of experimental regional time series. Unfortunately for the purpose of this discussion, my model is too bulky and awkward to present orally or briefly, and I will only relate its main features and the character of some of the results.

I once ventured the judgment that certain areas⁷—e.g., the Great Plains and Deep South—seem to be characterized by regions that share the lot of the worst of an assortment of worlds so far as the business cycle is concerned: a low *average* propensity to consume home products (that is, a high degree of specialization and dependence upon inter-regional trade); a high *marginal* propensity to consume home products

⁷ *Econometrica*, January, 1946, pp. 66-68; and *ibid.*, July, 1946, p. 214.

(that is, a low income elasticity of expenditure upon imports); a highly sensitive and relatively fluctuating "income determining expenditures" upon home products (that is, a high income elasticity of expenditure in outside regions for the export products of the greater part of the regions of these areas). Many regions in these areas show a relative short-run instability. Accordingly, to two of the regions of my model I attached what seem to me to be salient characteristics of relative instability. The other two I endowed with what I understand to be attributes making for relative stability. Briefly, the construction of the model followed the following lines:

1. Initially, in each region a specified amount of expenditure upon consumption and upon investment was assumed. Each region imported a specified amount of consumption goods and of investment goods from each of the other three regions. For the system, the total of exports equaled the total of imports and in the initial period this equality held for each region. The outlay upon a regions' consumption goods products and investment goods products in one period was defined to be the income of the succeeding period. The income of a given period determined the outlay upon consumption goods for that period.

2. The system was activated by alterations in investment expenditure. There was assumed to be a basic level of investment expenditure in each region. As investment projects that had been set in motion in the past were completed, certain parts of total investment outlay vanished, but we assumed that new projects were initiated "normally" sufficient "on the average" to compensate for this dying away of outlay so as to maintain a long-run constant outlay in each region. However, these mutual compensations were only on the average—the "expected" or mean value of these unplanned changes in the basic level being zero. For any given period the change in fact could be either negative or positive. We assumed a probability distribution of the magnitude of the change in fact, and we determined for each period and each region this random, unplanned change by a random draw from this probability distribution. This random alteration in the basic level for each region was cumulated from period to period, and while its expected value was zero, its actual value was a magnitude for which the theory of random runs would yield a probability distribution.

3. In addition to the random component of the change in investment expenditure, there was introduced a systematic component. A change in consumption in a given region was assumed to induce a certain change in investment expenditures in that region. The investment goods industry for export was concentrated in the two regions endowed with characteristics of relative instability, and a change in

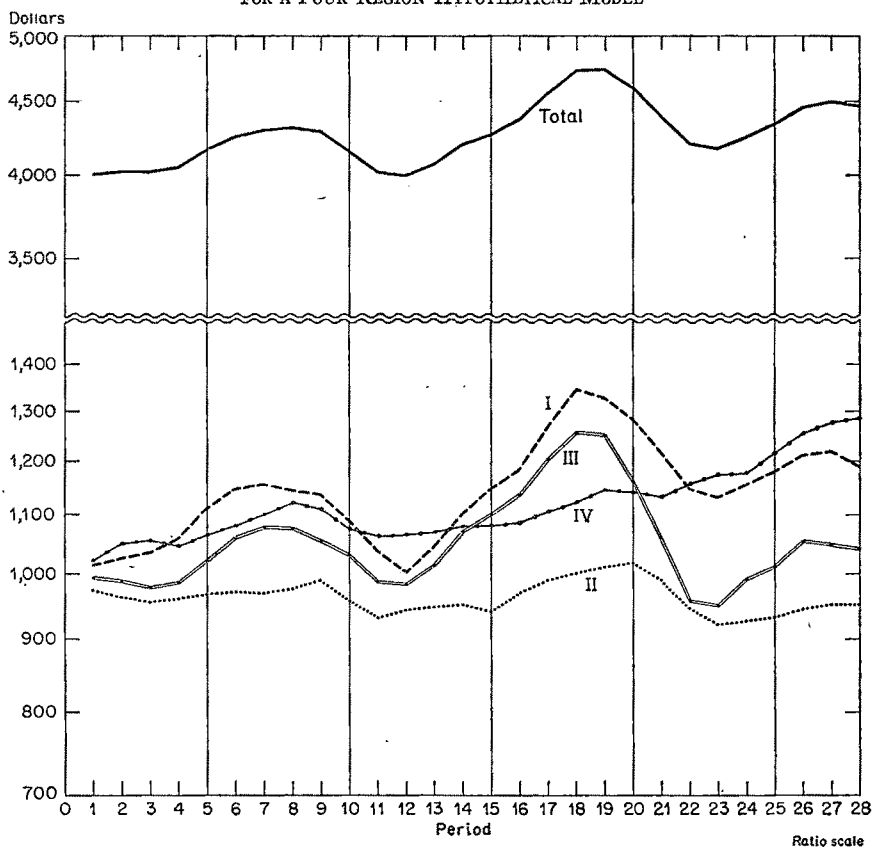
investment goods exports in one period was assumed to induce a certain change in investment expenditure.

4. Finally, for each region a change in consumption outlay was assumed to lead to a change in consumption imports from the exporting regions, and similarly for a change in investment outlay. For each of the two relatively unstable regions, the exports were made relatively responsive to changes in consumption or investment in each of the other three, and imports of either of these two were made relatively unresponsive to changes in its consumption.

The structural features of the system having been specified, the thing is put and kept in motion by the sequence of random impulses in each region. I have no time to discuss in detail the problems suggested by the experiment, but I will refer briefly to a few.

a) Chart I shows the income series resulting from one of these ex-

CHART I
INCOME PAYMENTS RECEIVED IN EACH OF THE FOUR REGIONS AND THE "TOTAL ECONOMY"
FOR A FOUR-REGION HYPOTHETICAL MODEL



periments. "National" income is the sum of the incomes within the respective regions. "Cycles," with a random irregularity, are shown for each of the series, and these have been generated by rationalized random impulses upon a system the structural features of which are numerically specified. Other time series not shown were obtained for each region and thus for the "total economy"—investment outlay, consumption outlay, consumption goods imports and exports, investment goods imports and exports. In a sense, the experiment demonstrates a theory of business cycles. A sequence of random impulses upon a structural system which includes lagged effects yields series that look much like those generated by the real economic system, and this has been demonstrated many times before. We could make the cycles as irregular as we please by introducing other rationalized random impulses—say, in the determination of consumption outlay and of imports—and we could make the average periods and amplitudes what we please by changing the character of the lagged effects. In the event that this account of the business cycle were found acceptable as a first approximation, our empirical problem would be that of determining from real series the interconnections and interdependencies, the nature of the lagged effects, and the bearing of the random, unplanned and unpredictable changes upon the level of the various economic flows.

That time series generated by a hypothetical model seem to the eye to have characteristics suggestive of time series generated by the economic system is very thin, or scarcely any, evidence in support of the theoretical validity and usefulness of the hypothetical model. So many things look like economic time series—cracks in side-walks, seepage dampness on concrete walls, rivers on maps, the silhouetted outline of the Blue Ridge mountains, the various ex post series generated by literally dozens of different econometric models—that one may almost say that the more difficult task would be to construct a model with some scant element of plausibility that would not yield something resembling time series. But if the model could be successively shown to exhibit features that may be observed as attributes of the behavior of the real economic system, then our respect for it as an organizing idea would accumulate with the increase of the number of cases of conformance between theory and experience. We could proceed with the development of the first approximation on the principle that any theory manifestly failing to conform with experience must be modified. From a mathematical analysis of our simple model, which I do not have at present, I believe that we might derive certain theoretical expectations subject to a test against real observations, and we shall briefly indicate the observable phenomena that are in mind.

In the chart shown it will be noted that beginning at a trough, the tendency of the aggregate series is to show a *rate* of rise that first increases, then diminishes, then disappears altogether to emerge again as a rate of fall, which in turn goes through the same alterations. This would be the case without the random impulses, but a glance at the ratio chart indicates that it is approximately so with our model. My impression is that such series as national income, retail sales, and the like have shown evidence of behaving similarly. This rate shown by the aggregate series is of course a weighted mean of the respective rates shown by the regional series, and these may show wide variation. If our model consisted of many regions of many types—it could be more realistic in having some regions tied directly to all others, but having many regions tied directly to only certain others, the union with the rest being indirect—we would have the material for a relatively smooth frequency distribution of regional rates of change. I believe that from the structural features of our model, including the character of the random component of change, we could derive the expected shape of this distribution with which we might compare the shapes of a series of observed distributions of regional rates of change. A detailed analysis of the model may yield expectations of certain evolutions of these frequency distributions: systematic patterns of change of the dispersion of the distribution as the average rate of change rises and falls; systematic shifts in the magnitude and direction of the skew as the different phases of change take place. In a later section we shall describe the general nature of empirical distributions of this sort, and in these distributions there are modest suggestions of evolutions such as are mentioned here.

b) In addition to the above phenomena, for which I presume there is a real counterpart in experience, our model implies certain cross-country economic flows that are at least suggestive of something that we may observe.

If we were to plot the balance of payments of each of the regions of the model, a cycle would be evident in these respective balances, although we must have abstracted from the heart of the adjustment processes that would bring about turns in the movements of trade balances—alterations in prices, income responses, and the like—that would tend to restrict a protracted flow in a given direction. As it happens, two of our regions show net losses from trade and two net gains, but there is nothing in the model that implies that the sign of the balance for any region should remain the same throughout. If there were many regions in the model, many types of behavior would be represented; in general, each balance would be cyclical with an amplitude determined by the structural features of the region. On the

other hand, nothing is evident about "real" conditions that would imply that the sign for a given balance could not be the same for a period of indefinite length. Regardless of these directions of the balances, financial mechanisms exist for the maintenance of a workable balance of payments. Short- and long-run financing of investment are thought to be the main parts of this mechanism, and over longer periods the exchange made available to the inhabitants of a region from their exports and from investments by outsiders balances out their outside commitments.

The cycles of the trade balances of the model underlay what we may imagine as cross-country flows of money funds that have a cyclical pattern in their shifts of direction. In the expansion phase funds have a tendency to flow from some regions and into others. As the expansion wears out and passes over into contraction, the system of flows develops different and characteristic tendencies. A cyclical pattern of financial flows is implied by a regional pattern of "cycle sensitivity," being a feature of regional change at varying rates. We have no knowledge of the presumably delicate mechanism—say, the investment processes—that maintains workable balances of payments and general regional solvency, but when investment processes stop, these cross-country flows of funds can become quite dramatic.

The picture is in accord with what is observed with respect to the regional distribution of bank failures, and I would expect to find supporting evidence in the cyclical geographical shifts of reserve funds. The presumably persistent depression outflow of reserves from the unit banking systems of the raw material producing regions of the South, Plains, and Mountain States has apparently in the past made the maintenance of bank solvency more of a problem in those areas than was the case for the banks in the regions into which these reserves tended to flow during a general contraction.

III

Having given an impressionistic account of our conception of regional economic structure and of some of elementary dynamic features of this structure, we will close our discussion with a no less impressionistic description of certain empirical data.

We mentioned above the possibility of deriving theoretical expectations of the behavior of rates of economic change within an interdependent system. I have not carried the development of a theory of regional economic interdependency to a point of interest, but in my preliminary empirical work I have chosen these rates of change as the quantities to study at present. As indicated, the aggregate rate of change is the weighted arithmetic mean of the respective rates of

change shown by the component population structures, and I look upon the rate of change for a given regional structure as analyzable into systematic and impulse components. The impulses being random, the systematic component in the rate of change should lead to some order and regularity that may be revealed through an appropriate arrangement of the material. A regular order of grouping of these regional rates of change is regarded as being suggestive of some structural binding together, and the detailed nature of this binding is the objective of my current studies. Some method of arranging the data is sought such that order may be recognized in the confusion of three or four hundred regional rates of change.

For this purpose, I prefer at present many regional observations in time of some one economic quantity reflecting the rise and fall of general economic activity rather than many series showing the behavior of a variety of industrial classifications of economic activity for one or a few regions. There is one set of data readily available (there are others, too, but I have not gotten around to them), although its interpretation is weighed down with ambiguities. If space permitted, such ambiguities could be discussed and evaluated, but I doubt that much would be added to what you already must know. The data that I have in mind are the regional series on bank debits, and they provide, I think, a suggestive picture. Not having the time to describe the data and their shortcomings, I shall accept these check expenditures for the many cities of this country as representative of business changes taking place and use them for a quick description of the movements shown within a great interdependent net of population structures.

Table I, shows a series of frequency distributions of the rates of change of the bank debits of the reporting centers—the debits for each year and each center being expressed as a percentage of the figure for the year preceding. A variety of interpretations are suggested by this table, but I shall confine my remarks to the experience from 1935 through 1942. I would like to raise for consideration the seeming search for an asymptote pursued by the center of the distributions during the twenties—until just as it seemed to be approached the bottom fell out. Then the reaction and the search again was on until the impact of the war was felt. Or I would like to comment upon the nature of the relative stability of the latter middle twenties that included in the neighborhood of two-fifths of the regions showing marked declines. But the period to be considered is sufficient to describe an impression.

Here we see a developing set of frequency distributions depicting the cyclical evolutions that take place within a great nation. These distributions are regular, approximating in shape the logarithmic normal curve. Following the depths of the depression, the entire range

TABLE I
FREQUENCY DISTRIBUTIONS OF ANNUAL BANK DEBITS BY REPORTING CENTERS EXPRESSED AS
PERCENTAGES OF PRECEDING YEAR*

[illegible]

*The 1938 figure 106.6 for the mean should read 89.3.

of the distribution completes a cycle consisting of a rise, a turning point, a decline, another turning point and a rise. In all of the years of rise there are found contracting regions. As the rate of rise slows down, the number of contracting regions becomes greater until the distribution itself is concentrated in the negative portions of the scale. Yet in the year of general contraction certain regions are expanding, and we can at least imagine, pending the availability and analysis of more detailed data, that as the decline slackens more and more regions find their way into the positive portions of the scale until the center of gravity of the distribution itself is pulled into this part. As the expansion proceeds, more and more regions are reached by the expansionary forces and fewer are left below the line; but as this exodus from the lower scale continues, the expansion is wearing out in certain regions, the rates of change in these latter areas slackening. All of this has occurred prior to 1941. Then suddenly our picture shows the impact of external factors of great magnitude. Immediately the distributions react—the dispersion is increased in a marked way, and a strong skew appears in the direction of the impact. The 1941 expansion carried all of the 274 regional centers into the positive portions. This generality of expansion had never occurred before in the history of these bank debit figures running back to 1919. But the intensity of the expansion in some regions, soon spent itself. This perhaps means in this case that construction projects, integral parts of the expansion, were completed in certain regions, that production schedules in particular lines of production, located in certain regions, because of differences in availability of resources, got ahead of other related lines and were deliberately retarded, and that errors of judgment occurred forcing a reduction in certain lines of expenditure that had been trained upon the “carrier” or “export” industries of certain regions. All of this was to the effect that some regions, thirteen of our group, were forced into a contraction by 1942.

The exaggerated expansion of 1941 and 1942 is instructive. It is clear why the skew appears when this sharp rise of nonconsumption expenditures is initiated. The expenditures are upon certain types of products—the output of the export industries of specific regions. Let us say that 30 per cent of the employment of one of these regions is engaged in these export industries—which is a realistic assumption—and that the new expenditures mean a 50 per cent rise—which is moderate compared with the increases actually involved in the war program—in the value of output of the export industries. Assuming a regional multiplier of 2, this rise in the one or few industries would quickly drive income up by 30 per cent. That is, income would rise by 30 per cent before the demand for exchange on other regions would

entirely offset the new supply of exchange made available by the new expenditures. These rises occur in certain regions, and other regions would not be affected directly. If fifteen to twenty-five regions out of this group are suddenly pushed up the scale of the distribution while others are only drawn up subsequently by virtue of the increased expenditures by the initially affected regions, the first effect upon the distribution will be a lengthening of one tail and widening of the dispersion. Particularly would this be the case when the expenditures are as concentrated and as large as in these years. It was not unusual for localized industries that make up practically the whole of the export industries of certain regions to double and triple their outputs while at the same time the outputs of other localized industries in other regions were reduced as a matter of policy. But something of the sort must occur in all expansions and contractions. The acceleration or the retarding of the expenditures along certain lines means the increase or reduction in nonconsumption expenditures within certain regions, and these regions shift upwards or downwards along the scale. The incipient stages of a contraction evidenced by the distribution of 1945 did not develop "naturally" or systematically, the extremely large injection of nonconsumption outlays thwarting its "normal" course.

Thus I think that the dynamics of cyclical change may be viewed with some addition to insight by observing the developing frequency distributions of rates of change and keeping in mind the relevant features of industrial location. Consideration of the latter matter is to be the next step in the work, and I plan to inquire into the respective positions of the various regions within these distributions and into the shifts of these positions as the phases of the cyclical fluctuations develop.

The systematic causes determining the position of a given region within the frequency distribution refer to the peculiarities of the structure of the region—the structural features in the sense used in the construction of our model. But it is clear how two regions spatially apart may be structurally identical and yet exhibit different rates of change; for the markets in which are sold the products of the export industries may be, and for perhaps most commodities characteristically are, different for the two regions. In the cases of certain commodities there are nation-wide markets and the prices of such commodities are determined in a central market. Agricultural raw materials—e.g., cotton—would be of this type as would certain types of iron and steel, machinery, automobiles, most of the minerals, and petroleum. The market areas for the products that are carrier or export with respect to a given region vary from this extreme all the way to a zone closely bounding the region itself. For example, lumber, I think, will be found

to be marketed within an area that includes not many states. And thus two spatially separate though structurally identical regions may show different rates of change because their respective carrier industries may have different systematic components to conduct.

Then we may have a situation in which regions are apparently identical with respect to markets as well as economic structure, and yet again the reactions may be different; for broad secular changes may be taking place that result in the gradual transference of the industry from one region to the other or to a growth of the industry in one region and not in the other. In the former would be located a preponderance of marginal plants. In the latter an expansion would be accompanied by new plant construction in response to the secular growth. We should find in the one region relatively weak expansions and deep depressions and in the other relatively weak depressions and strong expansions.

We evidently will also have differences of any magnitude resulting from random events. But over a period of years regions substantially similar in structure and in markets for carrier products should be found in the same general vicinity within the range of the frequency distribution. Random events, the shortcomings of the data used to measure the rates, and more fundamental differences in regional structure that may not be revealed by the statistics used as a basis for classifying the regions will bring about discrepancies; but by and large, patterns should be discoverable showing classes of regions with behavior substantially similar. The requirements for "expected" similarity of behavior practically restrict the number of regions that may be expected to fall in simple patterns to those whose carrier or export products have nation-wide markets.

On this, we have worked superficially and with but two sets of regions; viz., those whose export industries consist of what have been called the "cyclical industries"—the producers of iron and steel, machinery, and industrial equipment—and those whose export products are dominated by the petroleum industry. There are regions whose export industries are concentrated almost wholly in one or two of these industries, and such regions apparently fall into roughly consistent patterns. From the work that we have done we have an impression, although it is a pretty innocent one, that the parts of a given industry the products of which are marketed relatively uniformly within the nation are affected essentially similarly by something that we call "national" conditions. Some kind of unanalyzed average effect of changes taking place in the entire nation is imparted to these industries producing for a national market. The parts of these various special industries are geographically dispersed, and the similar

responses at the different geographical points set in motion a series of reactions affecting the residentiary industries of the regions within which these points are located. From these centers of reaction the changes work out to regions whose carrier employment produces products sold in the initially affected regions. Perhaps all regions produce some products that go into a nationally marketed product. The firms producing these products would act as small centers of reaction within the region, but the effects emanating from these tiny centers in the cases of isolated firms would be absorbed without noticeable effect. Those regions whose carrier employment consists practically entirely of those employed in industries producing for very wide markets are the centers of adaptation and will respond in a way dependent in part upon the average income elasticity of expenditure in outside regions upon their specialty. From such centers of reaction is propagated the changes issuing from an average of national conditions.

INTERREGIONAL CYCLICAL DIFFERENTIALS: CAUSES, MEASUREMENT, AND SIGNIFICANCE¹

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I. *Need for Area Studies*

The lack of a consensus with respect to the nature and causes of business cycles is undoubtedly an important reason for the conspicuous absence of a generally accepted definition. This absence apparently has not discouraged economists, however, for the literature bearing on cycles has continued to grow, and from it have come notions that have considerable currency. One objective of this paper, which will further complicate the definitional problem, is to establish the usefulness of a narrow spatial reference for cycles, and therefore to justify their study, not only as fluctuations in the aggregate economic activity of nations and as variations in the experience of the individual industries, but, also as variations in aggregate economic activity within small regions and in the individual industries thereof.

A variety of factors suggest that the study of cycles in small areas, especially in cities, may be productive. First, though crises apparently are as old as trade itself, the recurring movements which today appear to be an essential characteristic of all economies developed only after expanded trading permitted a considerable measure of geographic and functional specialization. Trade, per se, is not enough, for in spite of its development in the medieval period, sufficient to bring about the growth of its famous cities, the crises of the period were apparently associated with random causes.² Only with the modern city and attendant high specialization and large size of business units did the inherent instability which we call business cycles appear. In view of the coincident development of cycles and of large urban masses, it may well be that impulses originating in cities and transmitted to other parts of the nation sometimes constitute the causes of cycles. While the cyclical wave generated will show in national series, the original impulse may easily be submerged.³

Second, consistent divergences among areas in cyclical pattern may prove to stem from structural peculiarities of the areas involved. Such

¹ Much of the material presented in this paper is taken from a forthcoming study of the Haynes Foundation titled, *Business Cycles in Selected Industrial Areas*, by Philip Neff and Annette Weifenbach (University of California Press, 1949).

² W. Röpke, *Crises And Cycles* (London, 1936), p. 38.

³ This is not a denial of the possibility that events outside these urban centers may assume causal significance. However, most of the forces conditioning the movements will be centered in cities.

peculiarities are unlikely to be revealed by the examination of national cycles. This is unfortunate, since they might well contribute to a fuller understanding of the cyclical process. National fluctuations represent a composite—the sum of movements in each industry and area of the country. The picture of instability provided by such variables as national income, employment, industrial production, and the like is one in which a large amount of detail is lost. This loss may be unimportant; contrarily it may be essential to realistic cyclical theory. In either event an investigation to discover whether or not consistent interarea differentials exist is a necessary first step in discovering whether the lost detail is important. If divergences are small, then local variations are probably well represented by national data; if they are great, then the loss is likely to be significant, for the cause of the divergence may be an essential element in the cyclical process.

Third, even if cities or other small areas should prove not to be "strategic" in the causal process, still, if consistent differences appear, it may be possible to utilize them as a basis for more reliable forecasts than are now possible; hence, they may contribute to sounder private and public policy.

The literature bearing directly on intranational economics is surprisingly limited, and very little of it bears directly upon business cycles.⁴ This is partly a result of the methodological considerations involved, and partly of the notion that corrective policy, to be effective, must be nation-wide and hence that only those phenomena affecting all parts of the nation equally are worthy of study.⁵

Methodological matters have retarded the study of regional or area studies in two ways. First, both cost and tradition have delayed empirical studies of cycles. Only in recent years have systematic statistical investigations been undertaken, and these generally pass over the subject of regional variation.⁶ Classical tradition made the deductive process the fashionable method of economics, relegating empirical

⁴ There are certain notable exceptions to this. Especially significant are F. L. Kidner, *California Business Cycles* (Berkeley, 1946); R. Vining, "Regional Variation in Cyclical Fluctuation Viewed as a Frequency Distribution," *Econometrica*, July, 1945, pp. 183-213; "Location of Industry and Regional Patterns of Business-Cycle Behavior," *Econometrica*, January, 1946, pp. 37-68; "The Region as a Concept in Business-Cycle Analysis," *Econometrica*, July, 1946, pp. 201-218; J. H. Cover, "The Significance of Regional Business Analysis," *Journal of the American Statistical Association*, Supplement, March, 1929, p. 153; and A. Zempel, *A Statistical Analysis of Regional Variation in Business Cycles in the United States, Together with an Analysis of Cyclical Activity in the State of Wisconsin* (University of Wisconsin, 1934) (unpublished Ph.D. dissertation). In addition, certain other studies make significant though incidental contributions. See especially J. W. Angell, *The Behavior of Money* (New York, 1936), and A. A. Young, *An Analysis of Bank Statistics for the United States* (Cambridge, 1928).

⁵ C. O. Hardy, "Fiscal Operations as Instruments of Economic Stabilization," *American Economic Review*, May, 1948, p. 395.

⁶ See, for example, A. F. Burns and W. C. Mitchell, *Measuring Business Cycles* (New York, 1946), p. 5.

study to the subordinate role of verifying hypotheses and seducing many students into a false sense of satisfaction with respect to the validity of simplifying assumptions. Certainly, if international differences might be assumed unimportant, then so might intranational ones. Business cycle theories became theories of economic change in no particular setting. This undoubtedly accounts for the failure, until recently, of economists to study the transmission of cyclical impulses between nations. Second, empirical study of cycles in small areas has suffered because data available on a regional basis are far inferior to those available for the nation as a whole. Statistical requirements of any empirical study of cycles depend upon the theoretical conceptions of the student and upon the purposes to be served. There are no "ideal" data for the study of cycles, but series for small areas are almost nonexistent, and those few which are available are often unreliable. One is forced to fall back upon oblique measurement and inference; results, therefore, are likely to be inconclusive. Perhaps national studies still provide more fruitful prospects, if only because the necessity for improvisation and makeshift measures is substantially less.

The second possible reason for the failure of economists to study regional movements (namely, that effective corrective policy must be nation-wide in scope and therefore only nation-wide forces require study) may actually be in part responsible for that failure, but it is hardly a legitimate excuse. The demonstrable necessity for world-wide efforts to combat deflation and depression has not deterred the study of cycles on a national scale; neither should the possible greater usefulness of national policy deter their study locally. An understanding of all destabilizing influences and all aspects of the cyclical process is a prerequisite to optimum preventive and corrective policy.

II. *Problems of Area Study*

Forces affecting business conditions may be classified into four groups. First there are those that tend to act in an approximately uniform manner upon all parts of the nation and upon all segments of the economy. Among these are such general forces as changes in consumer saving as opposed to spending, and changed business psychology with respect to investment. Others not associated with coincident shifts in individual psychology also fall into this group; among these are federal fiscal and monetary policy, tax policy, and basic technological innovations.

Second, many nation-wide forces normally react more strongly upon certain regions than upon others. This differential reaction may be due either to the nature of the stimulus or to the character of the

economy of the region involved. The best examples of these were the forces at work during the war effort. The impact of the war on Pittsburgh was decidedly different from that on Los Angeles. In the former, government requirements strained existing capacity; in the latter it led to the creation of more new capacity. Another example is the impact of the Fair Labor Standards Act; its consequences depended greatly on wage levels in the various sections and therefore affected some areas more than others. Most frequently, reactions peculiar to smaller areas result from the character of its economy. Emphasis on certain types of activity (for example, transportation equipment in Detroit, or, more generally, durable producers' goods in Cleveland or Pittsburgh) may provide the basis for specific local reaction.

Third, there are forces originating within restricted areas, the consequences of which are transmitted to others. The best example of recent years is the impact of retooling in the automobile industry in Detroit in 1927. Unquestionably, at other times similar forces contribute importantly to movements in business activity, but their impact is lost when combined with other stimuli. Varied agricultural output, security market crises, and many other factors which may be classified as erratic fall into this third group of forces.

Finally, some forces operate primarily within particular areas, affecting their own regions most significantly and influencing others so slightly or so indirectly that their effects cannot be precisely traced. An example of this type is the influence of population growth or decline on a particular area and the attendant altered conditions in such localized activities as residential building and personal services.

These forces, when combined, may lead sometimes to similar cyclical movements in all areas and at other times to wide regional divergences. The relative strength of the forces making for convergence, as opposed to those making for divergence, determines whether area patterns will be similar or dissimilar. In the remainder of this section some problems encountered in measurement will be examined.

Empirical study of business cycles requires the elimination from the data of the changes which are not essentially cyclical in character. This problem does not present insurmountable difficulties of a conceptual nature once either the cycle itself or the noncyclical changes are defined. Although a consensus does not exist with respect to the criteria which establish the precise boundary of these changes, the margin of disagreement is certainly small. Unfortunately, the practical problem is substantially more perplexing, for the manner in which statistical series are processed to remove the noncyclical elements—secular, seasonal, and erratic movements—may affect the timing, amplitude, and pattern of the cyclic residual. Data discussed in this paper received

uniform treatment, which makes it probable that differences in the effects on each area of noncyclic residue are less than would be the case for any method involving a combination of treatments. Alternative procedure probably would not materially alter results.⁷

A second problem confronting the student of cycles concerns method of comparison, once data are isolated which conform to the concept of cycles employed.

Again the purpose of the investigation provides the most useful guide to method. Purpose justifies comparison of minute detail only infrequently; in any event the limitations on the accuracy of the data often make such comparisons statistically meaningless. Data available for the study of small geographic areas are hardly accurate enough to allow examination of the sequence of month-to-month changes. Fortunately, however, useful cyclical studies may be made which require principally the comparison of timing, duration, and amplitude, and in small area studies attempts to quantify characteristics other than these may lead to spurious accuracy.

Such comparisons will make possible tentative answers to the following questions: 1. Do industrial areas experience fluctuations in business which differ from those elsewhere in any significant respect? 2. Under what circumstances do these differences appear most marked? 3. Do divergent economic patterns account for a significant portion of whatever cyclical peculiarities appear? 4. Do different rates of growth account for cyclical peculiarities? Differences in timing, duration, or amplitude may be significant individually, and if they occur in concert there is little doubt as to their importance. They require explanation which may in turn have implications not only for general dynamic theory but for policy as well.

Timing differentials in this study are established by comparison of turning point dates in several areas, with the dates themselves chosen in such a manner as to discount the significance of single observations. The three consecutive monthly values with the highest and the three with the lowest average serve to date each turning point wherever movement from the previous turning point has exceeded 10 per cent.⁸

⁷ As suggested above, there is no unanimity of opinion with respect to the nature of the total cycle. Economists come much nearer to agreement with respect to what is not cyclical in nature. Thus adjustment normally takes the form of removing noncyclical elements from the total and regarding the residual as cyclical. This is not to say that non-cyclical elements fail to affect their complement but is rather a recognition that they have an independent existence: They are important per se, and their incidental effects on the cycle can most easily be appraised against a background from which major movements have been as nearly as possible eliminated. For a different view of this matter, see Burns and Mitchell, *op. cit.*, p. 270. See, also, E. S. Shaw, "Burns and Mitchell on Business Cycles," *Journal of Political Economy*, August, 1947, pp. 295-296.

⁸ In the study from which much of this paper was drawn, certain liberties were taken with this rule, particularly the requirement that any upswing or downswing involve at least a 10 per cent change to be identified.

Duration is measured by the number of months separating successive troughs or successive peaks, with significance attached to differences in duration only when they appear repeatedly and when they seem logically justifiable.

Amplitudes are measured in two ways. Percentage change from peak to trough and vice versa is the simplest, but it lays all stress upon extreme values. The second measure discounts extremes by giving to each value some role as a factor affecting amplitude; the values within a cycle were treated as a frequency distribution, and both central tendency and dispersion were measured. Wider dispersion in one area than elsewhere means that the values lie relatively farther from their own mean than elsewhere and indicates that, generally speaking, the cycle is more severe. Thus this procedure substantially reduces the dependence of amplitude measure upon the values at the turning points.

The third problem to be solved is the choice of areas to be studied. Again the hypotheses of the student should govern. The theories to be tested should in all cases be the principal determinant, and areas alike in all important respects except one or even several, provided their effects could with certainty be separated, would be ideal. Then the student, discovering either similarity or differences in cyclical reaction, could most assuredly assign or deny causal relationship.

An area so unimportant economically that it engenders no cyclical forces itself is not likely to deserve first attention nor is an area so complex that the effects of individual causes are inseparable. Strong likelihood exists that compromise will in the end be necessitated by statistical requirements. Though an ideal area for particular purposes may be conceptually attainable, it may not in reality exist; or if it does, requisite reliable data may well not be available. Certainly there is nothing peculiar to political or administrative districts which necessarily qualifies them for use for any of the purposes to which the economist might address himself, but practical requirements of empirical study may place them in the forefront of the alternative areas from which choices must be made.

III. *Conclusions*

Six industrial areas have been chosen for examination here: Pittsburgh, Cleveland, Detroit, Chicago, Los Angeles, and San Francisco. These areas are all industrial areas as defined by the Bureau of the Census. They therefore have in common the fact that they represent heavy concentrations of population and of manufacturing. They differ,

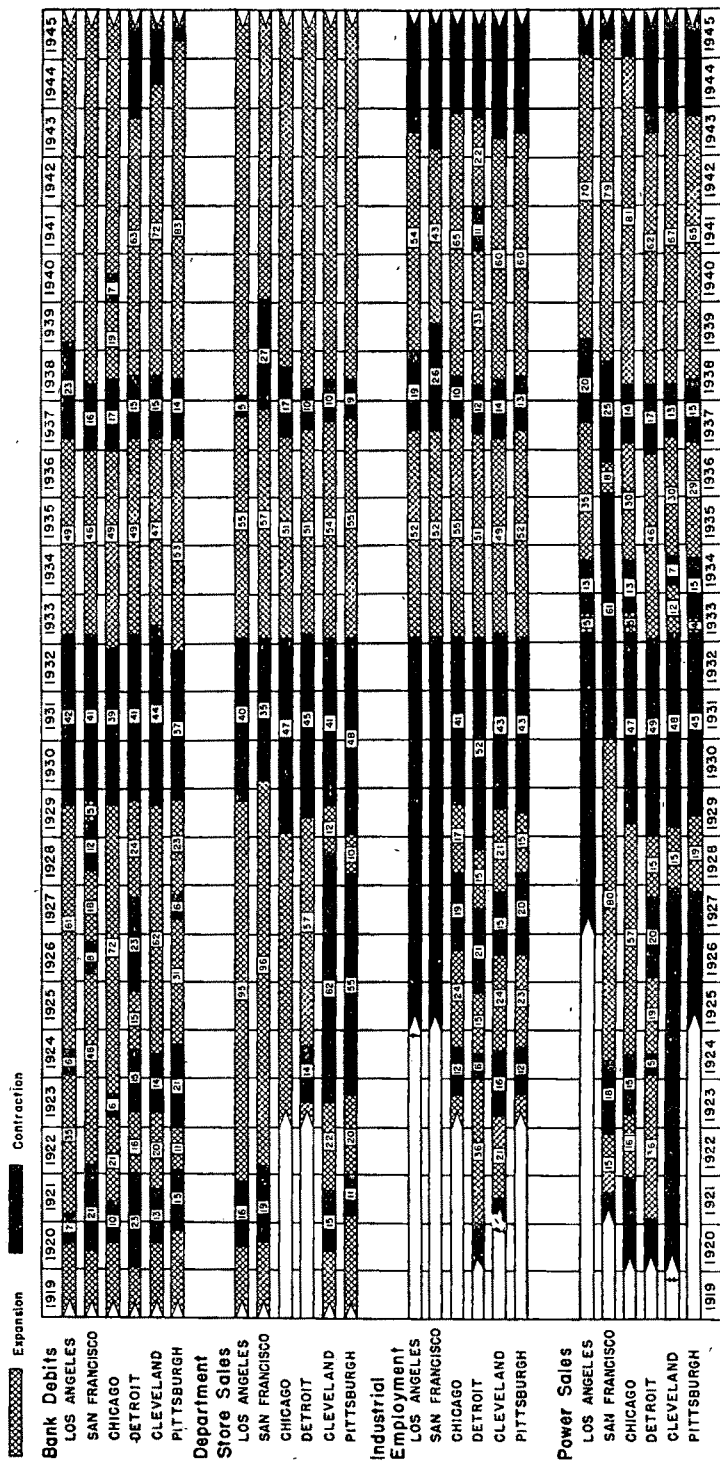
however, in several important respects. In recent years Los Angeles and Detroit experienced much more rapid growth in population and in manufacturing than the other areas; Cleveland and Pittsburgh actually registered slight average annual decreases in number of manufacturing wage earners between 1919 and 1939, though their population continued to grow slowly between these years. There are also marked differences between the areas in economic pattern; in 1940 Los Angeles and San Francisco employed in manufacturing only 20 per cent of total employment whereas in Detroit the analogous value was 48 per cent and in the others the values were between 35 and 39 per cent. The eastern centers all tended to concentrate much more heavily in durable goods manufacture than did the western ones, less than half the total employment in manufacturing being durable goods production in 1940 in San Francisco and Los Angeles. What is more, in Detroit, Pittsburgh, and Cleveland, single industries accounted for substantial portions of total manufacturing employment—nearly 60 per cent in Detroit and Pittsburgh and 30 per cent in Cleveland. These contrast with 15 per cent in Los Angeles and 22 per cent in San Francisco. This concentration in the eastern areas apparently is associated with larger units of business than in the west, for in Pittsburgh and Detroit the average manufacturing firm employed nearly five times as many workers as in the western areas, with a far larger differential in the major industries. On the other hand, these two western areas employ relatively larger numbers in trade, finance, services, and government—activities that are in large part residentiary in character.

Finally, the areas are widely separated geographically, and each has its own complement of resources and its own primary market area. The characteristics of each are not unique, but some are peculiar to one or only a few of the six. Pittsburgh, for example, has coal, Los Angeles, oil, and Chicago a regional market area far more heavily populated than the others.

These do not provide an exhaustive list of differences between the areas by any means, but they are certainly high among those that may be significant as determinants of cyclical characteristics, and it is with these in mind that the following data will be examined.

The series utilized in this study are bank debits, department store sales, industrial employment, and industrial and commercial power sales. The debits series is the most comprehensive, reflecting all transactions effected by check. Thus the debit series reflects prices and the volume of current production and distribution, of trade in goods produced in earlier periods, of land, and of securities. It involves much

CHART I
TIMING AND DURATION OF BUSINESS CYCLES IN FOUR SERIES, SELECTED AREAS, 1919-45



† Series started in 1925, not adjusted for trend earlier than 1927
 ‡ Series started in 1920, trend was negative until July, 1921
 Source: Philip Neff and Annette Weitenbach, *Business Cycles in Selected Industrial Areas*, Chart 6

duplication, since given goods are often exchanged many times, but on the whole varies closely with the volume of production and trade.⁹ The store sales series, like debits, reflects both volume and prices, but varies much more closely with consumption; relationship of this series to production and finance are of an indirect nature. Store sales tend to move closely with total retail sales but occasionally diverges somewhat because department stores seldom handle such items as food and automobiles.

The two remaining series—industrial employment and power sales—differ in coverage substantially from the others since neither is affected directly by price. The employment series represents manufacturing employment (either wage earners or production workers) and hence moves closely with industrial production in the areas concerned. The power sales series likewise is closely linked to output, but less so than employment since it covers commercial as well as industrial sales.¹⁰

For each of these—bank debits, department store sales, employment, and power sales—a straight line trend fitted to the entire period was computed and trend was removed. Conclusions with respect to timing, duration, and amplitude were derived from these cycle relatives. Chart I presents these for each series studied, and Charts II and III present relatives for selected series and cycles.

A ranking of the areas into two groups—those that reach a turning point first, second, and third and those that reach it fourth, fifth, and sixth¹¹ shows Detroit to be in the first group twenty of a possible thirty-two times (therefore, a tendency to lead). Cleveland, Chicago, and San Francisco appear neither to lead nor lag, for these areas are in the first or last group approximately an equal number of times, while Pittsburgh and Los Angeles display some tendency to lag.

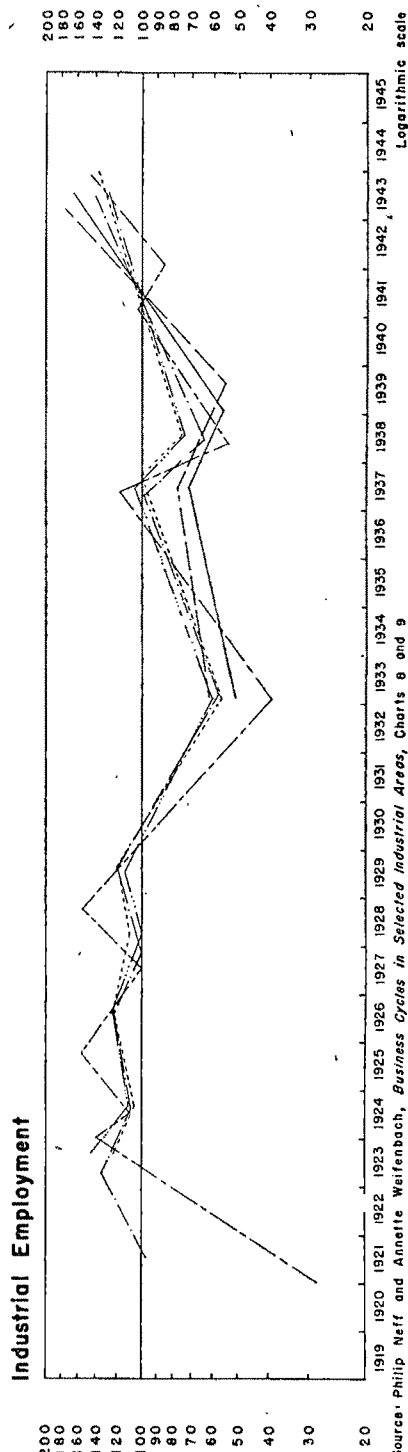
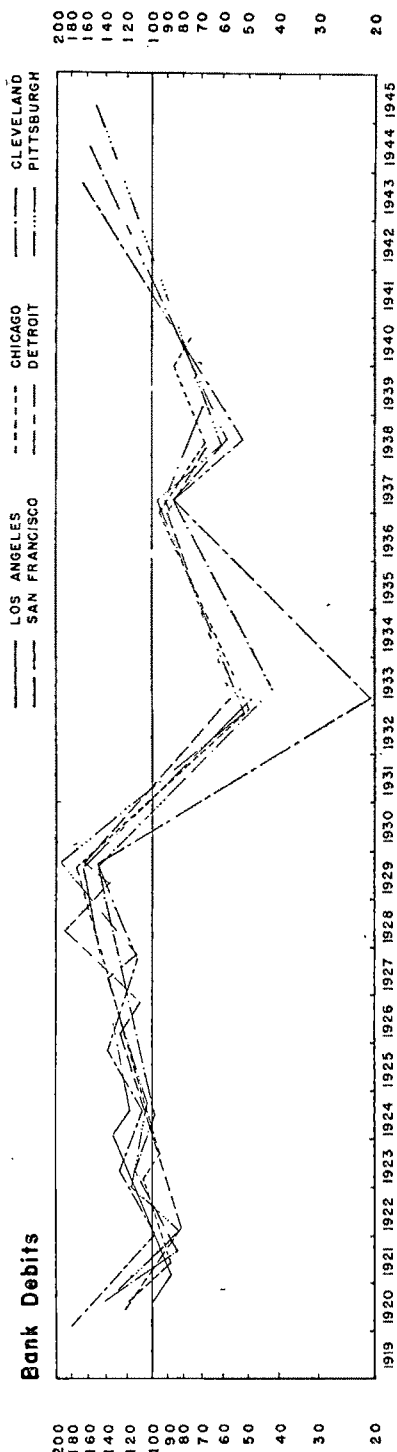
Chart I shows duration, in months, and from it comparisons can be made among areas. The data provided suggest a number of tentative

⁹ G. Garvy, *Debits and Clearings Statistics, Their Background and Interpretation* (Board of Governors of the Federal Reserve System, October, 1947), p. 3.

¹⁰ For San Francisco it was impossible to separate residential sales, so that series is far more inclusive. The relationship between residential sales and industrial and commercial sales in the nation suggests that though this inclusiveness of the San Francisco series will certainly affect amplitude, it is unlikely to alter timing and duration.

¹¹ It should be noted that the number of turning points which are ranked differ as between the areas. All six areas were not ranked at each turning point. Chart I shows, for example, incompleteness in the early years which makes it impossible to establish turning points in employment in the western centers prior to 1933 and in the eastern ones before 1923. Similar shortcomings in store sales and power sales in some areas also affect comparability. Moreover, wherever a given turning point is in excess of fifteen months removed from others, it was adjudged noncomparable. Hence San Francisco and Los Angeles have 21 and 24 points compared, and the others from 31 to 33. Frequently the third and fourth area values are identical and therefore cannot be assigned to either group. In such instances they were put into a third, in-between, grouping.

CHART II
 AMPLITUDE BETWEEN TURNING POINTS IN BANK DEBITS AND INDUSTRIAL
 EMPLOYMENT, SELECTED AREAS, 1919-45



Sources: Philip Neff and Annette Weifenbach, *Business Cycles in Selected Industrial Areas*, Charts 8 and 9

Logarithmic scale

conclusions. First, high rates of growth in population or manufacturing do not guarantee anything with respect to timing or duration. Both Detroit and Los Angeles grew rapidly, but one leads and the other lags and neither displays especially long or short cycles. Moreover, the slowly growing areas, Cleveland and Pittsburgh, do not display any considerable tendency to lag or to have experienced cycles of markedly different duration. Growth does not seem to control either timing or duration.

Second, only Detroit consistently displays a timing and duration which might be anticipated on the basis of industrial pattern.¹² Pittsburgh and Los Angeles, opposites in pattern, have similar timing; Chicago and San Francisco, much alike in pattern, display quite different durations. Industrial pattern certainly does not in any simple and direct manner always determine timing and duration; but as an underlying cause it cannot be completely disregarded—witness, for example, the likeness of duration in Cleveland and Pittsburgh and their differences from others, especially in store sales and employment.

The duration averages and timing rankings supporting these conclusions, however, do not give proper weight to unique experiences; this seriously reduces their significance. A glance at Chart II shows that in the period prior to 1929 diversity rather than uniformity characterizes the fluctuations of the areas. Similar disturbing differences are to be found after 1937. Causes for these include such factors as greatly expanded residential construction (Los Angeles in the early twenties); unusual activities in security markets (San Francisco in 1928); successes of Chevrolet and Frigidaire, the Ford shutdown, and a coal strike (Detroit, Pittsburgh, and to a lesser extent Cleveland) in the latter twenties; and the necessity for retooling specialized plants (Detroit in 1941). Cycles as defined in this study are far too complex and their causes too diverse to permit simple generalizations to suffice as explanations for divergent timing and duration.

Chart II presents two sets of time series: bank debits and industrial employment. These show peaks and troughs, with the rates of change in the phases represented as constants. Thus comparisons of these rates of change between the areas, between phases in different cycles in the same areas, and between the same phases in the two series can be made from these data. Chart II is useful in revealing facts concerning amplitude; nevertheless it hides significant matters since all emphasis is placed on extreme values of any phase, peaks and troughs. Chart III presents material illustrating the second method of measurement: the ranges, arithmetic means, and standard deviations of area

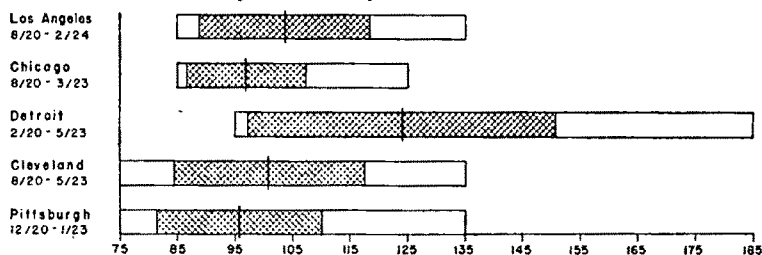
¹² J. M. Clark, *Strategic Factors in Business Cycles* (New York, 1935), p. 46.

CHART III

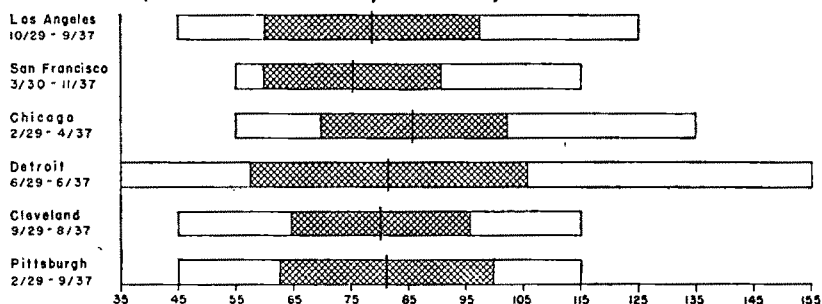
FREQUENCY DISTRIBUTION OF RELATIVES, SELECTED CYCLES


 Range
 
 Mean
 
 Standard Deviation
 
 Overlap of Standard Deviation

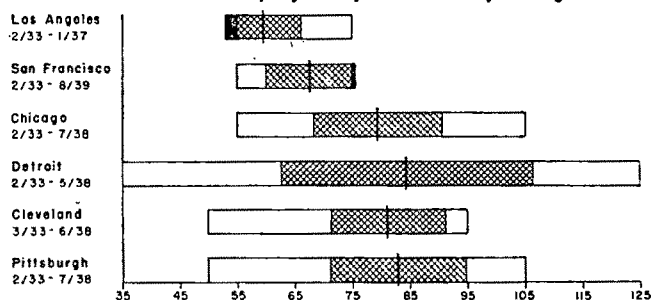
Bank Debits, 1920 - 1923, Peak - Peak



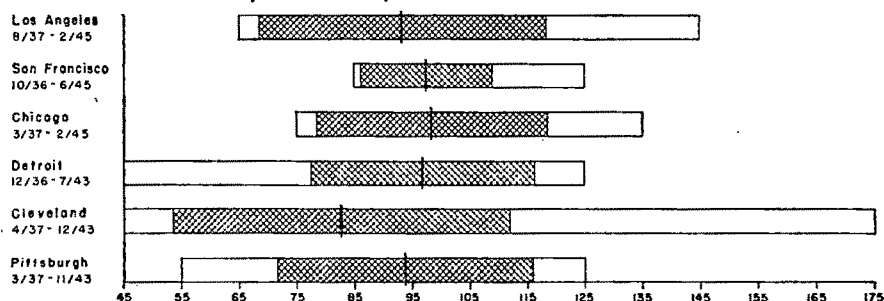
Department Store Sales, 1929 - 1937, Peak - Peak



Industrial Employment, 1933 - 1938, Trough - Trough



Power Sales, 1937 - 1945, Peak - Peak



Source: Philip Neff and Annette Weitenbach, *Business Cycles in Selected Industrial Areas*, Derived from data in Appendix II

values in several cycles comparable as to time appear.¹³ The use of the measure of dispersion is particularly helpful in summarizing divergence in amplitude.

It is perhaps remarkable that areas different in many characteristics experience cycles which so often have similar amplitudes. Charts II and III reveal that there are periods in which considerable conformance appears. Only during the period from the 1920 or 1921 trough to the 1929 peak is opposite movement between the areas often observable. That this period of nonconformance is one of relative price stability is not accidental, for it is through shifting prices that much of the linkage between areas takes place. It would appear that price instability is a necessary characteristic of "national" cycles, and that intranational differences are most striking when fluctuations are not accompanied by wide price movement. It does not necessarily follow, however, that transmission of a cyclical movement through the price system from one area to another will result in similar price movements in both; changing prices in one area may rather result in output changes in areas which have relatively rigid prices. This may serve to alter total values quite as much as relatively rigid output and flexible prices.¹⁴ Cycles that become national may result either from price movements which have been initiated by nation-wide causes or from price movements which have received their original impetus from a factor which at the outset had limited geographic significance. The movements of the twenties were insufficient to induce price movements of more than limited extent, and they were not brought on by general price level changes.

Second, divergent economic pattern of the areas studied does not appear to reflect itself in atypical cyclic amplitudes unless the divergence is extreme. Both Charts II and III reveal that Detroit generally experiences fluctuations which exceed those of other areas, although power sales between the 1937 peak and the wartime peak (Chart III) give Detroit a somewhat stabler position than Cleveland and Los Angeles. This unusual stability of Detroit was, however, associated with wholly abnormal demand conditions in the automobile industry; it is of such fundamental significance to Detroit that movements of all four series are dominated by it.

In areas other than Detroit, however, industrial characteristics are not sufficiently pronounced to reveal their role as a determinant of am-

¹³ The overlaps of the standard deviation shown in Chart III are caused by the skewed distributions of the cycles.

¹⁴ This helps to explain the similarity in the amplitude of the downswing from 1929 in Detroit and Pittsburgh as compared with Los Angeles. In the latter area, output of petroleum and citrus, major exports, remained nearly stable, but prices fell rapidly; in the former two areas, prices remained relatively firm, but outputs of principal products declined disastrously.

plitude clearly. Pittsburgh's economy is concentrated on a basic durable producers' good, as is Cleveland's, though in the latter city production is somewhat closer to the consumers' goods stage. Los Angeles is much more diversified than either of these, and is concentrated more on non-durable consumers' goods. In spite of this the three areas appear to experience cycles of comparable amplitude, especially when measured as in Chart III. Moreover, although the data presented here do not clearly show it, the positions of San Francisco and Chicago as financial centers never reveal themselves in series other than debits, and seldom even in the latter. Even at those times when speculative activity is highest, the importance of capital markets in these areas reflects itself in only one of the four measures.

These data also fail to provide any support whatever for the belief that the amplitude of cycles is related to rate of growth. Not only do trend-adjusted data fail to support this belief, but checks on the effects of adjustments and on unadjusted data indicate that this failure cannot result from the removal of trend. However rate of growth is measured, whether in terms of population change, increased manufacturing employment, or trend slopes of the series utilized, marked differences between the areas exist. Los Angeles and Pittsburgh, the two extremes, nevertheless appear to resemble each other most in cyclical response. Detroit alone of the six areas has significantly less stable cyclical movements, but it is neither the most rapidly growing nor the most slowly growing area; other factors are responsible. Neither, within a single area, do series with trends of sharply different slope provide cycles that differ significantly in amplitude. For example, the growth of bank debits in Chicago far exceeds that in employment over the twenty-five year period examined, but still the cyclical instability of the two series differed only slightly. The same observation may be made with respect to Detroit's power sales and employment.

Business cycles may be the final result of a few basic causes, or possibly of one cause alone. However, the multiplicity of differences among regional cyclical responses which appear suggests that localized forces are rarely if ever absent and frequently act with considerable strength. Their action may have results which are clearly traceable when approached through regional studies, or it may be so combined with that of other forces as to be unidentifiable. The number of divergences between areas which are explainable will, clearly, increase as better data are available and more refined techniques employed. The treatment of cycles on a national basis provides no means for studying the causation behind these differences. Many are undoubtedly accounted for by random events, which may ultimately have wide effect on national cycles but are likely to be themselves lost to sight in

the aggregative series of an entire nation; others display consistent behavior and can be explained in terms of non-random forces. Industrial pattern may be such a force, bringing about particular characteristic responses to destabilizing stimuli. The modifications of the cyclical pattern in various regions not only alter aggregate national series in and of themselves but also entail alterations in the patterns of succeeding links in the transmission process. Moreover, these non-random forces may themselves change, independently of business cycles, and thus either originate cyclical movements or considerably alter the general cycle pattern to be expected from other originating causes. Actual and hypothesized cycles will bear small resemblance unless forces causing regional differentials are taken into account. Failure to do so involves the assumption that they are not significant and is extremely hazardous; it may well introduce error sufficient to make questionable many conclusions heretofore regarded as entirely dependable.

DISCUSSION

GEORGE GARVY: All those who have no particular use for what Dr. Neff calls a "theory of economic change in no particular setting" will welcome any contribution to our factual knowledge of the working of the national economy that should result from the study of economic change on the regional level.

A comparative study of economic change in a relatively small region is undoubtedly of value to all those who are concerned with specific problems of a given area. The manager of a retail store, the social worker, and the unemployed looking for a job are more interested in business prospects in their home community and in its vicinity than in the composite picture for the country as a whole. The usefulness of regional business research is too well established to require any extensive comments.

If, however, the study of regional business cycles is to be more than a contribution to local business economics and help us to understand the dynamics of the cyclical movement of national aggregates, the causal interdependence of area and national developments must be established.

Indeed, the mere fact that there are differences in the cyclical contour of local and regional time series reflecting a relatively wide range of economic activities—such as bank debits, department store and electric power sales, and industrial employment—does not necessarily imply the existence of any dynamic process involving transmission of impulses. Business cycle research has firmly established the existence of significant differences in the cyclical behavior of various industries (and branches of economic activity in general). As industrial patterns of economic regions vary quite considerably, a composite indicator will reflect differences in the cyclical experiences resulting from variations in the economic structure. The existence of spatial differences in cyclical patterns would be compatible with a theory involving no intra-national transmission of impulses at all.

The particular relevance of regional cyclical research for the study of economic change on the national level arises from the hypothesis that disturbances originating in one region are transmitted to other areas. The idea that business cycles spread from local centers to larger areas can be traced back fairly far in business cycle literature. Many of you will remember that the classical description of the cumulative process in Part III of Wesley C. Mitchell's *Business Cycles* runs in terms of transmission of impulses from area to area as well as from industry to industry.

Dr. Neff suggests that impulses originating in urban centers and transmitted to other parts of the nation may constitute the cause of cycles. However, he neither develops nor tests this hypothesis, but instead compares cyclical patterns of four selected indicators in six large cities. Dr. Vining goes a step further in presenting a full-fledged theory of a spatial transmission of cyclical impulses within a closed economy. I am sure that his model could be expanded to take into account also impulses received from abroad.

Many students of business cycles directed their attention to swings in agricultural production as a cause of business cycles. The transmission of

impulses from agricultural areas to the industrial sections of the country is implicit in this type of business cycle theory. On the other hand, it has been noted that some cyclical movements have been particularly articulate in the industrial east and had a relatively mild effect only on the agricultural areas of the west. I need only cite the contraction following 1907 and in particular the "rich man's panic" of 1903.

Parallel to the problem of the intranational spread of business cycles is that of the international transmission of cyclical impulses. This aspect of business cycles attracted attention at an early stage when much of the literature discussed economic change in terms of trade crises. More recently, Professor Morgenstern has been exploring the international spread of business cycles.¹

One of the first problems that arises in connection with the study of economic change on the regional level is the definition of the economic region. An area may be defined as narrowly as the primary trade area, as suggested by Dr. Vining in an earlier paper, or as large as a Federal Reserve district, as is done in some cases on the grounds that some useful statistics are available only for such areas.

Probably economic areas of all sizes, small and large, receive as well as originate impulses. The importance of outside impulses, as well as the impact of any impulses that an area may originate, will to some extent depend on its size. Obviously, when the areas considered are small, it will be found that they are essentially recipients of impulses. Large areas, particularly those furnishing a significant proportion of the national output of important farm products, raw materials, or finished goods, are more likely to generate forces that ultimately pervade the entire economic body. I wonder, therefore, whether studies that aim at the clarification of the processes of transmission of economic impulses should not be conducted in terms of fairly broad geographic areas rather than in terms of individual cities as in Dr. Neff's and Dr. Vining's papers, although I realize that limitations of available statistical data probably account for their approach.

There is another good reason for focusing the investigation of the intranational spread of impulses to fairly large areas. It is likely that a study of the flows of payments would be particularly revealing for determining the nature of a region's relation to other regions and to the national economy as a whole. Because of the nature of data available, such studies of a region's balance of payments, as recently attempted for the Boston and the Richmond Federal Reserve districts² can be made for sizable areas only.

It is likely that studies of the interregional flow of commodities undertaken within the Federal Reserve System and elsewhere as a result of the recent basing point decisions will produce a wealth of empirical material relevant for the study of the economic interdependence of various parts of the

¹ See *Journal of Political Economy*, August, 1943, pp. 287-309.

² Two unpublished Harvard Ph.D. dissertations, one by J. Dewey Daane for the Richmond district ("The Fifth Federal Reserve District, A Study In Regional Economics") and the other by Penelope Hartland ("The Balance of Interregional Payments of New England").

country. A better knowledge of the actual flow of goods and services will help to locate the "lines of union" in Dr. Vining's theoretical model.

Substitution of city statistics for data relating to meaningful economic regions, even small regions, points to a danger to which all of us (empirical economists) are exposed—the danger of becoming slaves of the body of data available. The fact that the Federal Reserve System uses the term "centers" in connection with debits statistics should not let us forget the fact that, with one or two exceptions, they refer to individual cities rather than to small areas. Thus, the use of debits data actually restricts the investigation to the process of economic change in the larger cities rather than in a system of primary areas, as outlined in Dr. Vining's theoretical model.

Incidentally, Dr. Neff states that debits reflect—and I quote—"all transactions effected by checks." While in normal times the bulk of debits represents payments by check, other types of transactions also enter into debits as reported by the Federal Reserve System. Withdrawals of currency, transfers of withheld taxes, withdrawals from savings accounts, transfers between accounts of the same holder, and withdrawals from War Loan accounts are some of the transactions which swell debits but which cannot be described as check payments.

The study of the spatial transmission of cyclical impulses immediately raises the problem of leads and lags which is particularly important because of the forecasting value of leads.³ Both papers deal with timing. I doubt, however, whether Dr. Neff's attempt to discover systematic leads and lags by ranking cities according to the timing of all four series combined is very fruitful. One city might be consistently leading with respect to department store sales, for instance, but lagging in industrial employment, whereas the reverse might be true for some other city.

One of the intriguing questions that the regional study of business cycles should try to answer is whether spatial differences in business cycle patterns have been increasing or decreasing over time. At the time when industry was largely concentrated along the eastern seaboard and the economy of the interior was largely agricultural, there was more compartmentation and regional differences were probably larger than in more recent decades. Recent industrial trends have been in the direction of greater diversification of the industrial patterns in many parts of the country. There is also more diversification in agriculture. The rapid industrialization of previously predominantly agricultural areas is likely to be one of the forces working toward an equilization of cyclical patterns in the various parts of the country. The growth of corporate enterprise, and particularly of corporations of nation-wide scope with decentralized production facilities, is likely to tend to diminish the importance of local impulses and to increase the impact of those from the outside. Waves of optimism and pessimism radiating from local centers are thus frequently replaced by decisions of boards of directors which affect (not necessarily uniformly) the operations in numerous plants at distant points.

Again, I ask myself whether the limitation to the period for which bank

³ For some tentative findings see Cover's paper quoted by Dr. Neff.

debts and department store data are available—that is, since the end of World War I—is not unduly narrowing our perspective. In the period of the moving frontier, in the era of railroad building, of the discovery of new sources of ores and fuels, in years when the influx of immigrants to—or at least through—the eastern seaboard averaged as high as one million a year, the coexistence, within the national territory of rather diverse cyclical patterns must have been a much more significant fact than during the last three decades. The growing federalization of legislation in the economic field and the increasing importance of the national monetary, fiscal, and, last but not least, agricultural policies have also contributed to create a more uniform economic climate throughout the national territory.

If I were not too aware of the paucity of statistical data available, I should suggest that a regional study of business cycles would be more rewarding for the nineteenth than for the twentieth century. Maybe to hump a long mile without statistics is at times at least as rewarding as to walk statistically a short distance.

WALTER ISARD: I am pleased to have the chance to comment upon the two such pioneering papers just presented. Though I shall be highly critical of these papers, it should not be inferred that they are not of major significance.

My first point of criticism concerns the variable space. Both speakers have emphasized the need for a spatial framework of reference in attacking cycles. I strongly second this point. But neither speaker develops the framework, although it is only fair to state that Dr. Neff does not attempt to.

Dr. Vining states, "in consideration of international trade a spatial dimension is explicitly introduced into the conception of economic structure." This statement is important for he implies that in a similar manner a spatial dimension can be introduced into the conception of the economic structure of a nation. He further maintains that it is the factor "space" which generates the variation in behavior of the different regions in his model.

With respect to international trade, it is obvious that each nation at any given point of time is fixed geographically and thus has spatial points of reference. But so far as I know, aside from Lösch's work¹ and perhaps Weigmann's² international trade analysis has not really gone any farther than the obvious with respect to spatial relations. Back in 1911, Alfred Weber³ pointed out that classical trade theory ignored entirely the variable space. And though Viner⁴ is correct in maintaining that Weber's statements were somewhat confusing, nevertheless Weber did point out a sorry deficiency of

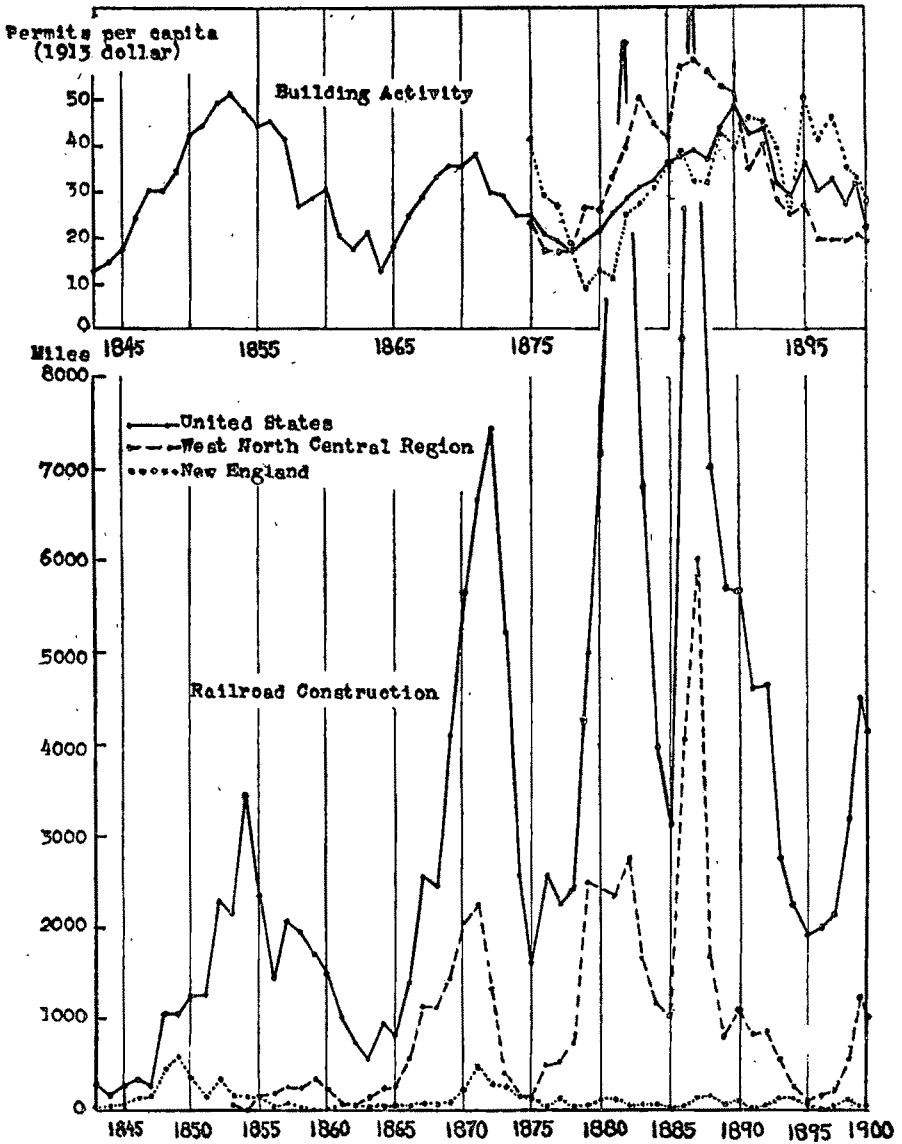
¹ August Lösch, *Die räumliche Ordnung der Wirtschaft* (Jena: G. Fischer, 1940).

² Hans Weigmann, *Kritischer Beitrag zur Theorie des Internationalen Handels* (Jena: G. Fischer, 1926).

³ "Die Standortlehre und die Handelspolitik," *Archiv für Sozialwissenschaft und Sozialpolitik*, May, 1911, pp. 667-688.

⁴ Jacob Viner, *Studies in the Theory of International Trade* (New York: Harper & Bros., 1937), pp. 467-469.

CHART I
ANNUAL RAILROAD CONSTRUCTION AND BUILDING ACTIVITY



trade theory. Viner has not recognized this, especially when he minimizes Ohlin's contribution. If nothing else, Ohlin⁵ did explicitly emphasize the importance of the spatial (location) factor and tried, though not successfully, to work it into international trade theory. In the standard treatises of today,

⁵ Bertil Ohlin, *Interregional and International Trade* (Cambridge: Harvard University Press, 1933).

such as Viner's⁶ and Haberler's,⁷ the space variable is not treated. And so with Mr. Vining's work.

Dr. Vining's model like Mosak's recent contribution⁸ can be thought of as describing a one-point economy, which one can divide into as many parts as he wishes, to indicate the number of regions or nations he desires to consider. In other words, Dr. Vining's model, contrary to his intentions, is independent of the space factor. He recognizes that in actuality spatial relations do affect the basic characteristics of regions, yet he does not show this with respect to his four hypothetical regions. You and I can construct models similar to Dr. Vining's under various sets of assumptions as to the variable space (I do not know which set Dr. Vining has adopted, if any), and the relations would come out just as Dr. Vining's. For interregional analysis to be meaningful (and I consider international analysis part of interregional) one must show how the relations between any two hypothetical areas would differ if these same two areas were differently spaced. Or, again, in interregional cycle analysis it should be shown how a cyclical impulse in one region is transmitted to other regions, and how distance modifies the force and manner of transference.

I do not wish my statements to be construed as minimizing Dr. Vining's work. To treat the space factor is certainly a very difficult task—no easier than the time factor. I myself have already spent three years on space theory, and often wonder if I have achieved anything.

A second matter which I would like to discuss is interregional variations with respect to the longer 18-20 year cycle. I have time to present only a smattering of the material. See the accompanying chart. On the top half I have traced building activity (in terms of permits per capita based on the 1913 dollar) for the United States (solid line) for the period 1843-1900, and for the cities of New England (dotted line) and the West North Central region (dashed line) for the period 1875-1900.⁹ Note the three long building cycles: the first, from 1843 to 1864; the second, from 1864 to about 1878; and the third, evidenced in both regions and the United States, though with varying amplitude and timing, from about 1878 to about 1900.

On the bottom half of the chart is plotted railroad construction, 1843-1900, the period within which the basic network was constructed. Here we have regional data which go back to 1843.¹⁰ The data show that the construction

⁶ Viner, *op. cit.*

⁷ Gottfried von Haberler, *The Theory of International Trade* (London: William Hodge and Co., 1936).

⁸ Jacob L. Mosak, *General-Equilibrium Theory in International Trade* (Bloomington: Principia Press, 1944).

⁹ The data were obtained from John R. Riggleman, *Variation in Building Activity in United States Cities* (doctoral dissertation deposited at the Johns Hopkins University Library).

¹⁰ For New England and the United States, data up to 1880 were obtained from the volume on Transportation, *Tenth Census of the United States*, after 1880 from annual issues of *Poor's Manual of the Railroads of the United States*. For the West North Central States, which include Missouri, Kansas, Iowa, Minnesota, Nebraska, North Dakota, South Dakota, Wyoming and Montana, the data were obtained from the latter source. Up to 1880 for this region the data are annual increases in mileage of railroads; after 1880, annual construction. Rigorously speaking, annual increase in mileage is somewhat different than annual construction for these earlier years, but for our purposes this difference is minor.

of our superb railroad net was achieved in three major outbursts: the first, from the middle and late forties to the late fifties; the second, from the end of the Civil War to the early seventies; the third, from the late seventies to the early nineties. There was a brief relapse in the middle eighties, perhaps reflecting the operation of one of President Schumpeter's Juglar cycles. But from examining the historical literature, the construction from the late seventies to the early nineties is best viewed as one outburst. As a result of these three outbursts we have cycles in transport development during this period; and these cycles have a one-to-one correspondence with the building cycles. If one looks further, during this period he will find similar cycles in immigration, population growth of cities, iron and steel development, bituminous and anthracite coal production, etc. This matter I have treated elsewhere.¹¹ The important question now is what is the relation between the transport development of the different regions of the United States and building activity within these regions.

Elsewhere¹² I have advanced the thesis that the major causal force of the building cycles in the United States was transport development. So far as I can see from studying the development of individual cities—New York, Philadelphia, Boston, Baltimore, Pittsburgh, St. Louis, Chicago, and others—in most cases transport development was the most important factor in their longer-run ups and down during the nineteenth century. A second major factor was immigration and population growth. Transport development and immigration and population growth were strongly interrelated. Much transport development was provoked by population growth, by increased demand for transport services. But on the other hand, transport development induced immigration by blazing the path. My impression is that this latter relation has been the more important. Our basic railroad net was constructed well ahead of demand. I like to think in terms of President Schumpeter's innovation theory of the cycle. The railroad was *the* innovation. It was injected into the economy in three outbursts. Each injection caused vast structural changes in the economy, drastic industrial realignments, major rearrangements of trade channels, stimulated immigration, and industrial and population growth. As a consequence there was a spurt in urban development corresponding to each of these transport injections. As each of the transport outbursts waned in force, so too the stimulating effects; urban growth fell to lower levels, most frequently subnormal because speculation, working upon the basic impulse from transport, had previously induced overbuilding. Thus we obtain the outline of our building cycle.

If we accept this thesis, we come to an excellent illustration of an inter-regional cyclical relationship. Refer to the chart. Though the building data

¹¹ "A Neglected Cycle: The Transport-Building Cycle," *Review of Economic Statistics*, November, 1942; and (with C. Isard) "The Transport-Building Cycle in Urban Development: Chicago," *Review of Economic Statistics*, November, 1943.

¹² "Transport Development and Building Cycles," *Quarterly Journal of Economics*, November, 1942; and *Economic Dynamics of Transport Technology* (doctoral dissertation, 1943, Harvard University Library). Also see Norman J. Silberling, *The Dynamics of Business* (New York: McGraw Hill, 1943), Chs. 9 and 10.

are not broken down by region for the earlier period, it is clear from the literature that the characteristic building cycle was prevalent in most regions. From the records we have, New England did experience a building cycle from 1843 on, corresponding to the national one. I would attribute it largely to the transport development of this region. The building cycle in New England after the Civil War was not very closely tied to railroad development in New England. New England's share of national railroad development was quite small as is seen from the chart.

In the last quarter of the nineteenth century there was only a dribble of railroad construction in New England. Yet New England experienced a building cycle. It is my thesis that this third New England building cycle received its major impulse from the railroad development of the rest of the country. This development was of a tremendous magnitude. It spread its effects among all regions. New England must have been greatly stimulated by the transport and subsequent commercial and industrial growth of the rest of the country. New England's manufactures and employment opportunities must have grown apace with expanding markets elsewhere, affording the basic force behind her building cycle. I think it is significant to note the lateness of the New England building cycle. The building cycle of the West North Central region—one of the most heavily railroaded areas in this period—is well in the forefront of the national, while that of New England lags behind the national. This would be expected since of all regions New England perhaps experienced the most indirect effects of the national transport development.

It seems to me that this is a striking illustration of the spatial transference of cyclical impulses. It seems to bring out more clearly the real need for spatial cyclical analysis than do the interregional variations of bank debits, department store sales, industrial employment, and industrial and commercial power sales which Dr. Vining and Dr. Neff observe. These latter are not too marked and so need to be expressed in terms of tendency to lead or lag, of relatively small differences in amplitude of fluctuations, and of frequency distributions of rates of change. I venture the proposition that major cyclical differences among regions are most likely to be found in these longer-run 18-20 year cycles, and in such basic series as transport development, population growth, building, etc. And I believe that empirical study of these longer-run 18-20 year cycles will be more suggestive in analysis of interregional cyclical relations. I would strongly urge that further inquiry follow these lines.

FRANK L. KIDNER: The papers presented by Dr. Vining and Dr. Neff are very different in terms of the problems which the authors have set for themselves and, in turn, of the methods which they have undertaken to employ in their studies. Dr. Vining is concerned with the establishment of a model system serving at once to define the meaning of an economic region and to describe the relationships between regions so as to provide a conceptual basis for the study of interregional cyclical behavior. Dr. Neff, on the other hand,

appears to be less concerned with the theoretical problems of method and definition and more concerned with the analysis of certain empirical materials; namely, four time series for each of six industrial areas and over a period of some twenty-five years. In view of the wide difference in objective and treatment, it seems wise to discuss the two papers separately and against a backdrop of certain notions which the present writer believes to be germane to the subject of this meeting.

Business cycle studies have usually taken the form of attempts to explain theoretically the recurrent appearance of booms and depressions within a closed economy, characterized in general as an individualistic economy given over to capitalistic production methods but unspecified as to political boundaries or other spatial references. And those studies designed to provide an explanation of such fluctuations in the level of economic activity as have had an empirical reference have typically been confined to a single political unit, ordinarily a nation. Not only is it true that the study of business cycles has usually gone forward in these terms, but the international aspects of business cycles have, with the exception of limited attention, been neglected. This leaves open two important questions: (1) Given cyclical fluctuations in one or more countries, how are impulses generated in one country transmitted to other countries? (2) If cyclical fluctuations experienced by several countries appear to be significantly different, how may one explain the origin and nature of the differences?

Within a nation as large as the United States, in particular, this same set of questions may and should be raised concerning the cyclical behavior of the various regions within the country. Both Dr. Neff and Dr. Vining, in one way or another, are concerned with these questions and with problems incidental thereto. Let us turn first to Dr. Neff's paper.

Dr. Neff classifies the forces affecting business conditions into four groups: first, forces of uniform impact throughout the economy of the United States; second, those which arise in the national economy but which provoke regional responses of varying character; third, those forces arising in a narrowly defined geographical area but producing effects which are transmitted elsewhere; and, finally, those forces peculiar to a single region arising there and exhausting their effect at the point of origin. I am not confident that useful illustrations of the last-named type can be found. And I question the usefulness of the third classification of forces. The first two are of much more importance, and they rely to a much smaller extent on the notion that economic events can at once be important and isolated with respect to geographical origin or effect.

Assuming, for the moment, that appropriate comparisons of regional behavior are made, the four questions to which Dr. Neff indicates answers may be forthcoming are interesting. In my opinion, the two which are the most interesting are those which inquire as to the relation between significant differences in cyclical behavior and the structure of the economy on the one hand and the rate of growth of the economy on the other. The literature of business cycle analysis would certainly suggest that, if within an area subject

to the same monetary and fiscal policies varying cyclical experience is recorded, the explanation should be found in varying composition of output, varying patterns of factor use, and varying secular trends. The statistical examination of regional data with a view to ascertaining the extent of differential behavior and the attempt to explain it is obviously to be desired. The definition of the region for this purpose is of prime importance. I will return to that question in a few minutes.

Dr. Neff's inquiries have involved an examination of the timing, duration, and amplitude, of the cyclical fluctuations of four time series for each of six industrial areas. It is not maintained, obviously, that any but the most tentative conclusions concerning differential, cyclical behavior can be based upon such a limited experience, whatever methods are involved. But since the gradual accumulation of economic knowledge can stem only from numerous experimental attempts to add to the store, this criticism is less weighty than that which goes to the question of method of measurement. Two aspects of the measurements employed by Dr. Neff require comment.

Dr. Neff establishes the turning points, upon which the remainder of the comparisons depend, apparently, by running a three-months' moving average over a time series (it is not clear what adjustments have first been made) and "the three consecutive monthly values with the highest and the three with the lowest average serve to date each turning point wherever movement from the previous turning point has exceeded 10 per cent." It is stated that "some liberties were taken with this rule." I must say that I do not understand the reasons which suggest that the minimum amplitude of what is here implicitly defined to be a cycle should thus arbitrarily be limited to 10 per cent of some prior value, or to any other ratio thereof. This is, of course, an important point since the durations and the amplitudes of the cycles thus defined are governed by the turning points thus discovered.

If it be assumed, however, that cycles are thus properly discerned, we may turn to another measurement—the measurement of amplitude. Dr. Neff points out that one may measure amplitude in terms of percentage change from peak to trough, and from trough to peak, but that this method "lays all stress on extreme values." This does not, apart from the possibility of an unrepresentative value for a single month, appear to me to be an objection. Indeed, in respect to the question of amplitude, it is precisely the difference between the extreme values—properly defined peaks and troughs—that is required. Dr. Neff proposes, as an alternative, the treatment of "all the values within the cycle as a frequency distribution," and the measurement of central tendency and of dispersion. If this refers to contraction periods and expansion periods separately, then the averages produce an attenuated measure of the extent of these movements. If it refers to whole cycles, I do not see how it measures amplitude at all. I do not agree, moreover, with the statement that with such a measure a wider dispersion in one area than another means that in the former area the cycle is more severe. I think other interpretations equally reasonable can be provided.

It may well be that in the larger study shortly to be published by Dr.

Neff certain of these matters will be clarified in a degree impossible in a brief paper, and that conclusions there reached, including those indicated in Dr. Neff's present paper, may be more confidently accepted.

Dr. Vining has set for himself rather a different task; and in part it represents a continuation of the subject matter so ably presented in the series of articles in *Econometrica*, to which reference is made in footnotes to his paper. The task has to do with the proper definition of a region, and I believe it to be a most important single task to be undertaken in regional business cycle studies. A proper conceptual framework for such studies requires both a clear-cut notion of what we mean by the phenomenon which we are studying—the business cycle—and of the nature of the regions which we differentiate for separate study. As Dr. Vining points out, "the challenge is to discover the structural features and the operational characteristics of this entity." In the attempt which Dr. Vining has made to accomplish this task I find much to approve, although I am not sure that I agree with one of his basic notions which, even if overstated, does not do injury to much of the remainder. The notion which I question is that it is proper to say that the "economic community is organized around its export industry." Ignoring this for the moment, however, I think it safely may be said that Dr. Vining has made, here and elsewhere, a real contribution to the understanding of the concept of a region, and that the arithmetic models that he has devised provide a useful conceptual framework for further theoretical and empirical inquiries. It will frequently be found that grave difficulties arise in attempts to put flesh on the bones, but it is clearly a good way to begin.

Dr. Vining's treatment of the bank debit series and his interpretation of the results are most interesting. They suggest that regions similarly constituted may exhibit marked differences in cyclical behavior and that, therefore, the structure of a regional economy may be a less important determinant than many have believed it to be. Two questions arise in my mind in this connection which I would like to see investigated. Are such regional differences as exist more pronounced in periods of contraction or in periods of expansion and are there regions so constituted that they do not reflect aggregate cyclical behavior in the nation except when the latter is very pronounced? Several ideas contributed by Dr. Vining will be useful in the attempt to examine these questions.

By way of conclusion, I should say—and I am sure that both Dr. Neff and Dr. Vining will agree—that the question of regional differences in cyclical behavior is closely related to the theory of industrial location, and that upon this relationship, as well as upon the general problem, further work is required, both at the conceptual level and at the level of empirical investigation.

ROBERT L. STEINER: We are assembled to discuss an infant in the field of economics—the study of interregional variations. For this reason, there is nothing more pressing than to set up a general framework and to high-

light the important concepts. Unless this is done there can be no real back and forth between various theorists in the field while empiricists will constantly be in danger of picking up irrelevant information and disregarding pertinent data.

Dr. Vining has furnished us with an excellent model of a system of regions. However, I suspect that Dr. Neff's pronounced skepticism as to the relationship between population growth and cyclical stability is a result of his having given inadequate attention to the nature and function of the industrial area.

Perhaps by going a little deeper into the structure of industrial areas and the dynamics of their growth we can discover some links between oscillation and growth.

Because of comparative cost or plain physical inability to produce them, our specialized creature, the industrial area, requires a large volume of imports. These imports consist chiefly of basic industrial raw materials, food stuffs, manufactured goods that cannot be made as cheaply as in other areas, and services such as transportation, etc.

To obtain needed imports, industrial areas export mainly manufactured goods, and to a lesser extent wholesaling and transportation services.

Finally, just as there are goods and services that must be exported to pay for imports, so there are others that because of convenience and comparative cost are almost always sold locally. The latter group includes the output of local firms engaged in such industries as retailing, construction, amusement, professional and repair services, and city transportation.

Generally speaking, goods sold locally in an industrial area are not in competition with imports. On the contrary, derived from the demand for residentiary output is a joint demand for foreign products and for local agents of production who further fabricate or at least distribute imports.

Due to this and the specialized nature of the industrial area, there is for any value of exports a rather definite value of output in the residentiary segment, and the ratio between export and residentiary employment appears to be fairly similar throughout our industrial areas.¹

We can also conceive of there being some sort of rough balance in an industrial area when the export industries just pay for the imports that the population desires and the output of the residentiary industries is just equal to the demand for it.

Now, the important question is whether it is by an initial expansion of exports or by an initial growth in residentiary output that this equilibrium is upset and new population attracted to the city.

At the outset, it is obvious that unlike the residentiary industries the expansion of exports is not shackled by the requirement that the puny local market absorb their additions to output. The nation and even the world is their market and all they need do is beat out competition in other cities for this vast market. Urban growth can take place so long as the city's

¹ But allowance must be made for size and rate of population growth.

export industries are successful in carving out new foreign markets for themselves.

The new effective demand created by a rise in exports results in an intensified demand for residentiary output and thus for labor (i.e., population) in these industries. An increase in the value of exports causes an increase in the demand for residentiary output of, let us say, $3x$ (of which x equals the value of imports and $2x$ the value added locally).

Not until the value of residentiary output has been augmented by $3x$ has a new equilibrium point been attained; while any advance past this amount markets a supply for which there is no local demand and which thus disappears.

We can fathom why the equilibrium can always be broken by expanding exports but seldom by producing more residentiary goods and services if we equate the value of residentiary output with the money cost of producing it.

We remember that there are only certain few specialized functions that the industrial area is fit to perform; so that the value of almost any residentiary product has embodied in it a greater or lesser degree of imports. It then appears that a substantial part of the dollar disbursements incident to the cost of such production is paid to foreigners. Therefore, the money income paid out locally in residentiary production is less than the value of residentiary output. Any volume of residentiary output past the equilibrium point thus tends to vanish since the demand is insufficient to take it off the market at prices covering the cost of production. In other words, beyond equilibrium no exports are available to close the gap by paying for that portion of the value of residentiary output which imported goods and services comprise.

True, certain few services are probably independent (in the short run) of imports and the full value of the product is paid out locally. However, the difficulty here is that such services compete with other goods and services for local disposable income so that the possibility of any large growth in the demand for them is drastically limited.²

The twin purpose of these brief remarks on urban growth has been to nail down the point that industrial areas grow mainly by enlarging their exports and to demonstrate that this process places industrial areas in severe competition with each other for markets and the attraction of population.

The areas Professor Vining deals with are not explicitly in competition with one another, but is not the concept of geographic competition a realistic and useful one which can be fitted into the framework of Vining's model?

Within a section of the country industrial areas vie amongst each other for transportation and wholesaling functions while their manufacturing

² Limitations of time force me to impound into *ceteribus paribus* all considerations of changes in investment outlays and technology as well as shifts in aggregate consumer taste to products whose value embodies a larger or smaller proportion of imports.

export industries compete over much greater areas. The fastest growing industrial areas are those best able to expand their exports because of various advantages the city may have over its competitors.

Now, depressions are periods where competition is the keenest and only the fittest survive. In the heightened struggle among industrial areas for a diminished share of the national and sectional markets, those best able to survive are the ones whose export industries are in the strongest competitive condition; i.e., the very ones able to grow the fastest secularly.

An industrial area might show a slow rate of growth because its export segment contained a greater than average localization of secularly declining industries or because its plants were marginal operators within any given industry.

Dr. A. F. Burns has shown in some unpublished research that the decline of senile industries is greatly accelerated during and around the trough of cyclical depressions. I submit also that marginal operators within any industry meet the same fate. Here is a *prima facie* case for believing with Dr. Vining that fast growing areas exhibit less sensitivity to the downward swing of the cycle.

However, my own research with Cincinnati, Cleveland, and other mid-west industrial areas has led me to believe that this is so chiefly where depressions are of long duration and severe intensity. For, in shorter cycles where the principal swing seems to be in inventories, the collapse may be worse in rapidly growing areas whose firms had planned on a continuing large-scale expansion. Furthermore, financial and real estate activity in fast growing cities is usually characterized by a buoyancy and recklessness which contribute to population growth, though at the expense of stability.

To introduce one further complication, although the fate of the passive industries ebb and flow over the long run with the level of activity in the export industries, this correspondence may not be so high over periods of business cycle length.

For instance, from 1929 to 1933 employment in the eleven largest manufacturing export industries of the Cincinnati metropolitan area showed a characteristically greater amplitude of fall than the same industries in competing cities and the national average for these eleven industries. Nevertheless, the passive segment of the Cincinnati economy as measured by such indexes as retail employment, department store sales, new residential construction, and assets of building and loan associations, experienced a smaller amplitude of fall than in competitive cities and the United States as a whole.

This is explained by the fact that the residentiary segment was unusually well insulated from short-term dips in exports by the relative stability of consumer purchasing power arising from the conservative business and financial practices, the high propensity to save, the large body of unproductive consumers, and the pronounced desire of Cincinnatians for safe rather than speculative investments. Needless to say, such conservatism has also hampered population growth in the Cincinnati area.

I have tried to show by a closer scrutiny of the industrial area that there is indeed a very close tie-up between growth and stability. But rapid growth though perhaps usually resulting in less sensitivity to depression may also work in the opposite direction in certain cases.

When trying to establish empirically the connection between oscillation and growth it seems to me that certain types of data ought to be collected. To begin with, we must gather information separately for export and passive industries—for reasons just stated.

Secondly, we must discover to what degree the export industries of several industrial areas are or are not in competition with each other. From this point of view it is one thing when Dr. Neff compares Chicago with Pittsburgh and Cleveland and quite another when he compares it with Los Angeles and San Francisco.

Finally for our purposes we would want to know, for instance, whether the marginal steel industry of one city that was losing out over the long run to the low-cost steel industry of another, showed a markedly larger amplitude of fall in depression. To obtain information of this type the export segment must be broken down into its component industries and these compared to the same industries in competing cities and the national average.

Such a breakdown is not to be found in Neff's paper and his charts are thus apt to be misleading, because a city whose individual manufacturing industries each showed a smaller amplitude of fall than its neighbors might yet have suffered worse in aggregate manufacturing employment simply because its economy had a greater localization of unstable type industries.

In conclusion, may I suggest that to Dr. Vining's determinants of stability be added a consideration of the rate of growth and competitive position of the areas being studied.

THE THEORY AND MEASUREMENT OF PRICE EXPECTATIONS

SPOT AND FUTURE PRICES AS PRODUCTION GUIDES

By THEODORE W. SCHULTZ
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The title of this paper may be refreshingly remote from the day-to-day problem of pricing farm products in the United States. It may, however, have a fatal academic ring, for it can be said that anyone who discusses spot and future prices instead of support prices is indulging in a bit of unwarranted nostalgia, and he who relates prices to resource allocation is making a premeditated retreat toward the ivory tower. To observe that practice is not on speaking terms with theory gives little aid or comfort. The essential truth of the matter is that while the fortunes of farmers may rise and fall, parity goes on and on.

There is, however, another side to the state of opinion on farm prices. Fortunately, the question has not been closed. On the contrary, it is quite unsettled. The realization is widespread that the existing agricultural price policy is far from satisfactory. But a mere return to markets in their present stage of development would not give satisfactory results. Both public measures and private marketing institutions have serious shortcomings.¹

In public policy, we are embarked on a course of action with regard to farm prices that will take us back to marketing quotas and production control. Although it is not possible to achieve a satisfactory allocation of resources by means of these control measures, they are being hauled out and put into operation once more in order to preserve a system of price supports which do not have the capacity either of clearing the market or of guiding agricultural production. But we seem to be determined in this matter to learn about pricing farm products the hard way. We shall soon discover, albeit by trial and error, that it is quite impractical in most parts of agriculture, over the years, to direct or even to check agricultural production by the use of these techniques. They simply will not work. Once that lesson has been learned, perhaps the stage will be set for a more rational approach to pricing farm products. That time, however, may be a long way in the future.

¹ For a brief review of these matters, see a paper by L. J. Norton, "A Long Term Agricultural Policy for the United States," and mine, "Agricultural Price Policy," before the Academy of Political Science, New York City, November 10, 1948, published in *Proceedings of the Academy of Political Science* under the title, "Food," January, 1949.

On the other hand, the claims commonly made for the existing (private) markets for farm products substantially overestimate their efficiency as institutions for guiding agricultural production. These markets, including those with highly organized spot and future prices, for the most part have not been developed to bring about an optimum allocation of resources in agriculture. They serve primarily to clear the supplies made available from day to day. The more highly organized markets probably serve quite adequately the managers of elevators, processors, exporters, and other traders who want to hedge and those individuals and firms who want to acquire a long or a short position in commodities. These functions are important, but they are only a part of the pricing problem that confronts us in developing markets that will, among other things, induce farmers to make an optimum use of agricultural resources.

I. *Central Argument and Setting*

Against this brief background, let me state the central argument of this paper. I shall take it for granted that it is one of the primary functions of farm prices to guide the allocation of resources in agriculture. I will endeavor to show: (1) that the resource malallocations that have become embedded in American agriculture are to an important extent a consequence of farm product prices; (2) that the existing markets for the different farm products vary greatly in their efficiency as production guides; (3) that the principal underlying cause for these differences is the amount of price uncertainty placed (imposed) upon farmers in making their production plans; (4) that the underlying conditions determining the price effects of stocks have largely been such that *among* the markets of the different farm products, the more durable the product, the greater the price variations and the resulting price uncertainty imposed on farmers; and (5) that *within* those markets having both spot and future prices the two sets of prices have been determined by the same supply and demand forces, with one exception, and that within such markets neither the spot nor the future price has been as meaningful to farmers in making production plans as has the spot price in the markets of most of the more perishable farm products.

The setting of this paper is restricted to the American scene, with its highly commercial agriculture, producing a wide range of perishable and nonperishable commodities. I shall assume that the fundamental values and beliefs of our society and its supporting institutions are such that in the case of agriculture, where firms are small and numerous and where entry is easy, prices should perform the function of inducing farmers to allocate properly the resources employed in agriculture. I am

mindful that parts of American agriculture are seriously encumbered by the adverse effects of resource maladjustments, representing a fundamental disequilibrium consisting of an excess supply of labor and a deficiency of capital, especially in many sections of the South. Moreover, I realize, of course, that in any short-run context prices alone, no matter how perfect, will not do the job of correcting these widespread maladjustments, certainly not in a year or two. Yet I do contend that a set of meaningful prices is an important necessary condition in bringing about the desired solution of this problem.

In dealing with prices, I shall restrict this analysis to two types of prices; namely, to the cash-spot price, defining it as the price on the cash market for spot delivery, and to the forward-future price, consisting of the price in the futures market for forward transactions. For the sake of brevity, I shall omit the qualifying terms "cash" and "forward" and refer to the first as the spot price and to the second as the future price throughout the remainder of this paper.

II. *Farm Product Prices and Resource Malallocations*

How meaningful are spot and future prices of farm products to farmers in making their forward production plans? The answer, of course, depends upon the existing conditions. No doubt it is possible to lay down conditions under which either a spot price or a future price would specify the optimum allocation of resources in agriculture. These conditions, however, have not existed nor are they readily attainable in a dynamic economy which is beset by a great deal of supply and demand uncertainty, and which requires long-range production plans as is the case in agriculture.

As far as I can tell, no satisfactory theoretical link has been forged bringing together the two ends of this chain. Much indeed has been written about anticipations and expectations, and on the role of flexibility and liquidity in an effort to achieve this linkage. However, the results of these efforts to date in terms of useful insights have been quite meager. Economic analysis as yet appears to have relatively little to say that is meaningful about the problem of economic uncertainty, unless it be that of pushing the problem aside. We do not have at hand an analytical framework for handling in an integrated and consistent manner both spot decisions and forward decisions with regard to consumption, savings, and production under dynamic conditions with uncertainty present. If this is the state of economic knowledge, there is little point in merely reviewing what has been done in this sphere.

I shall proceed on the belief that in order to advance our thinking in this area, it will be necessary to take those bits of economic apparatus

that we do have and use them the best we can in selecting the conditions that appear to characterize, in this case, the agricultural sector of the economy. This procedure of trying to classify and then to select the important essential conditions would seem to be a necessary preliminary step to the formulation of the problem at hand in such a way that more fruitful theoretical work can be undertaken. Unless this is done prior to the setting up of models, there is the danger, since all sorts of conditions can be imagined as being relevant, of merely concocting models ad infinitum.

Inasmuch as American agriculture is made up of a wide variety of products and markets, the differences among them should make it possible by means of comparative analysis to acquire some insights into the underlying circumstances that enter into the pricing problem. On the presumption that some farm products have had a better system of prices than have others measured in terms of the effect of prices upon the allocation of resources in agriculture, two general approaches may be followed. One of these is to study these differences with a view of isolating the underlying causes and the other is to examine the observable effects and see whether these throw any light upon why it is that some farm product prices seem to do a better job than others in terms of resource allocation.

In carrying forward a comparative analysis of this kind, it is necessary to specify those aspects of resource allocation to be studied and then to classify farm products according to the degree of mal-allocation that characterizes the production of various farm products. There are, of course, a number of different aspects to the problem of achieving an optimum utilization of farm resources. For our purposes it will be convenient to specify three types of resource settings. They are as follows: (1) resource commitments for the *distant future*, meaning by this forward resource decisions that are fixed for more than one production period; (2) commitments for the *near future* consisting of forward decisions that are fixed for one production period; and (3) the *spot* situation covering decisions that involve only a (small) fraction of one production period. In the case of the third of these, the spot situation, I shall in effect put it aside by assuming that the spot price does allocate the farm supplies (resources) that are offered and taken at any given moment in an optimum manner. This assumption means that, even though, for example, strawberries were in short supply in Market A and were to glut Market B on a given day, the spot price in Market A would achieve an optimum allocation of the strawberries among existing sellers and buyers in that market, and the spot price in B would do likewise. It may well be true, of course, that the two markets could be integrated with

considerable net advantage. This aspect, however, of spot prices will not be entered upon in this paper.

This leaves us with the resource settings 1 and 2, the distant and near future decisions as defined above. Is it possible to classify our major farm products under these two headings and rate each according to the degree to which the existing utilization of resources employed to produce the product departs from an optimum utilization? Although such a classification bristles with difficulties, there is considerable evidence at hand—enough in fact to permit some judgments. A few general remarks are necessary, however, before attempting such a listing. The war and early postwar years, fortunately, have lessened very appreciably the widespread underemployment of major categories of resources in agriculture. It is clear that this underemployment was simply a counterpart of the mass unemployment in other parts of the economy. As a result, now that resource relationships have tightened up, it is possible to see more clearly than before the character of the malallocations that are embedded in agriculture. It should, of course, be noted that the classification that follows is based on certain beliefs about the normal values of farm products and of the resources required to produce them. These, however, are not likely to be in serious dispute.²

1. *Long-term Departures from Optimum.* Among the major farm products, milk undoubtedly heads the list with the smallest departures in relation to what may be considered an optimum use of farm resources. This judgment regarding the production of milk applies to the principal milk sheds producing milk for the industrial-urban populations. Hogs and corn in the heart of the corn belt and poultry, including eggs where they are one of the main farm enterprises, would appear to rank somewhat below milk. Soybeans and perhaps other feed grains would come next. These products may be taken as a group for the differences among them in terms of resource malallocations are not very marked. A second group of farm products may be identified consisting of cattle in the main breeding areas, wheat where it is the principal farm enterprise, flaxseed, sheep and wool. These products appear to fall appreciably below the first group in long-range malallocations of farm resources. Far below both of the above groups, we have a third cluster consisting of rice, peanuts, cotton, and tobacco

² In making the listing that follows I found it quite beyond the scope of this paper to include a systematic review of the economic data and studies that offer some insights on the resource malallocations that exist in American agriculture, commodity by commodity. A considered statement of the assumptions underlying such a classification and the materials that I have brought together are so considerable that, while they cannot be included in this paper, they may deserve space and attention on another occasion. The order in which the various farm products appear in the list below should be viewed as a tentative and preliminary rating, as a rough first approximation.

with the first two in this group not nearly so far down the list as are cotton and tobacco.

Before examining the implications of this list of long-term departures from an optimum utilization of resources to farm product prices, let me explore briefly a classification of some of these farm products in their short-term setting. In the case of the listing already presented we were dealing with maluses of labor, land, machinery, and of other fairly durable capital forms in agriculture. These maluses of resources have been of long-standing. They arose out of resource decisions that committed the distant future. Moreover, production decisions by farmers to reduce or eliminate these departures also require long-run forward commitments. There are, however, another set of departures from an optimum which arise out of the way in which agricultural resources are employed—chiefly within a single production period. The rate at which a farm product is produced from year to year with a given set of resources consisting of fixed amounts of land and machinery, varies widely because of the way in which stocks, mainly feedstuffs, are handled in agriculture.

2. *Short-term Departures from Optimum.* This list will be restricted to animals and animal products since not enough is known about the alternative contributions of stocks in the case of most of the other farm products. Corn and other feed grains are of course an integral part of the livestock economy, and the departures to be noted for animal products in the short run are caused primarily by fluctuations in the yields of feed crops and by the way in which feed stocks are used to counteract these fluctuations. Here, again, fluid milk must be placed at the top of the list, followed by cattle, sheep, poultry, including eggs, and hogs appear to belong at the very bottom.³

To return to the main query: how meaningful are farm product prices to farmers in making forward production decisions? If we assume that the resource malallocations that have been observed are the result of shortcomings of the existing system of farm product prices, we would conclude on the one hand that the market for milk, a highly perishable product with no future prices, has been relatively efficient in guiding the allocation of resources in agriculture; and on the other hand that the market for cotton or for wheat, consisting of products that are quite durable and the storage of which is not very costly, with highly developed spot and future price quotations, have been quite inefficient in bringing about an optimum utilization of resources used in growing these two important crops. This comparison between milk

³ See Table 1 of my "The Economic Stability of American Agriculture," *Journal of Farm Economics*, November, 1947, and Ch. VI in *Forward Prices for Agriculture* (University of Chicago Press, 1947), by D. Gale Johnson.

and cotton or wheat brings to the surface one of the deep-seated biases of economists to the effect that a highly developed market with price quotations for spot and for near and distant future transactions continuously subject to change is distinctly superior to one that does not have these pricing features. There is, so it seems to me, a strong presumption that economists generally have been prone to overrate greatly the performance of highly organized commodity markets as an institutional means for achieving an optimum allocation of resources in the production of farm products.

In making this comparison there is, of course, the underlying assumption that these differences among farm products in resource malallocations are in some significant sense the effects of our system of farm prices. Undoubtedly a good deal can be made of the imperfections in the capital and labor markets that serve agriculture. Capital rationing is widespread; and unguided private migration of people out of agriculture has not been sufficient to drain off the excess supply of labor in many farming areas. These imperfections, however, are not unrelated to the ways in which farm product prices are made. In fact some of the more important causes for capital rationing and for the underemployment of labor in agriculture have their roots, so it appears, in the behavior of farm prices. We shall therefore proceed on the assumption that the resource malallocations that have been associated with forward commitments, both for the near and distant future, are at least in considerable part the effects of the existing system of farm prices.

III. Conditions Underlying Prices That Cause Resource Malallocations

Let us turn, then, to an examination of what it is about farm prices in this context that causes these resource malallocations. Can we get any useful clues from the theoretical conditions presumed to be necessary for an optimum allocation? Taking as a starting point the proposition that the spot price does equate the spot supply and demand situation, under what conditions will this price be a perfect guide in making production plans? Obviously, if production could be achieved instantaneously, we would expect the spot price to be a perfect indicator. But when forward production plans are required because of the technical circumstances that surround production, very unusual and special conditions must be postulated in order to make the spot price a perfect forward price. The useful distinction between a market price and the normal price is an elementary recognition of the differences between these two situations. Inventories and storage have always been viewed as a connecting link. Fresh fish has been

the classical illustration where day-to-day market prices fluctuate widely around the normal price. If the product were durable and the costs of carrying supplies forward were negligible, the spot price would presumably be a better guide to use in making production plans than it would be if the product were highly perishable. In the case of agriculture, however, most of the output is highly perishable in character. Animal products generally must be viewed as perishable in this context and these account for about 70 per cent of all the farm resources used to produce food in the United States.⁴ In addition most truck crops and many of our fruits and vegetables are also highly perishable. More disconcerting, however, is the fact that in agriculture the farm products that are least perishable have for the most part the poorest record in terms of resource allocations.

The real difficulty that confronts us arises out of considerations of economic uncertainty, and it must be admitted that our theoretical apparatus is still too weak a reed for the task. Liquidity in the way assets are held, flexibility in the way resources are committed, and diversification to lessen the dispersion of income receipts, are all parts of the long chain of effects of yield and price uncertainty. They afford some insights with regard to the costs of adapting production to yield and price uncertainty, but they have not been very meaningful in formulating the necessary conditions with uncertainty present for an optimum allocation of resources. Similar observations seem to be in order on the usefulness of the prevailing notions on expectations and anticipations.

What we need to get at in this problem is some conception of uncertainty that is sufficiently restricted to have meaning in relation to the events we are trying to understand. To get such concepts we are driven back to empirical observations for the essential restrictions. In the case of agricultural production, I believe some headway can be made by simply looking upon the variations in yields and prices that are not subject to the control of the farmer as indices of the uncertainty that affects adversely the use that is made of farm resources. I am led to this approach by the fact that these variations appear to be closely associated with the resource malallocations listed earlier in this paper.

The following observations will have to suffice in indicating briefly and tentatively the importance of these variations to the problem at hand. They are restricted throughout to the main producing areas. We shall take first the long-run departures from optimum.

⁴ Raymond P. Christensen, *Efficient Use of Food Resources in the United States* (Tech. Bul. No. 963, U. S. Department of Agriculture, October, 1948), p. 39.

The production of livestock and of animal products generally is subject to comparatively little yield uncertainty. In producing these products the typical farmer can control the yield that is achieved within fairly narrow limits. If we leave aside the effects of periodic fluctuations in feed supplies upon livestock production, the yield uncertainty that remains, for instance in producing fluid milk, is probably of the order of 2 to 5 per cent.⁵ This element of uncertainty is somewhat larger in cattle and hogs than it is in milk and it is possibly twice as large in producing poultry and eggs.

The yield uncertainty that confronts farmers in producing field crops must be seen in two fairly distinct settings. One of these consists of any single crop year for which the yield uncertainty of each of the major crops, except rice, is very large, ranging possibly five to ten times as large as that of milk. In a long-run setting, however, these variations in crop yield become appreciably less and need not burden production appreciably more than they do in livestock, provided that farmers make forward production plans covering a number of years on the basis of expected acreage yields and that they have the necessary capital to manage regardless of how the small and large yields are distributed over this period of years.⁶

In relating the variations in farm prices to the long-term departures from an optimum allocation of resources, it is very hard to untangle the variation in prices caused by fluctuations in yields from those that pertain to the long-run value of farm products. The principal shortcoming of the existing system of farm prices arises precisely out of this fact; namely, that it does not separate these two aspects in pricing farm products. From the point of view of a typical farmer making long-run forward commitments, the farm price for fluid milk probably rates comparatively high among major farm products as a meaningful price because it is encumbered with less uncertainty in this context than are other farm prices.⁷ Even so, however, the variations in the price of fluid milk cause several times as much uncertainty as do the yield variations in milk. Taking the price for milk in this connection as a kind of standard, it appears that the prices for poultry (including eggs), cattle, sheep, and hogs follow in that order but fall substantially below milk, with hogs in about the same class

⁵ That is, given a set of inputs, the rate of output can be controlled within these limits through more than one production period.

⁶ In fact, however, few farmers have had at their command enough capital to manage their operations through thick and thin of our "cycles" of good and bad crops without being disturbed by the distribution of their income over time.

⁷ In making this statement I am quite aware of the fact that the market for fluid milk is so organized that some of the variations in yield are transferred to butter and other dairy products.

as are our major field crops. The situation in crops is obviously much more acute; the prevailing price uncertainty is probably several times as large as that affecting milk.

The short-term departures from optimum listed earlier in this paper require a brief comment at this point. The particular malallocations are to be ascribed to fluctuations in the supplies of feed. They affect principally livestock and animal products. The fluctuations in feed have restricted substantially the control that farmers have achieved over the production of livestock. As among the different kinds of livestock, hogs have fared the worst and milk production the best with cattle and poultry, including eggs, in an intermediate position.

On the basis of this brief survey of yield and price variations in agriculture I shall base my analysis upon the following propositions: (1) that there are yield and price variations in agriculture which give rise to economic uncertainty of various forms that can be identified and measured; (2) that these uncertainties affect adversely the production plans of farmers, and the larger the uncertainty the larger the malallocation of resources; (3) that the variations in yield, and the uncertainty which they give rise to, are relatively unimportant in the production of livestock, and with sufficient capital, they would also be quite unimportant in the production of crops over the long pull; (4) that the variations in farm prices are an important source of uncertainty and one of the principal causes for the observed malallocation of resources in farming; and (5) that the existing markets for the different farm products vary greatly in the amount of price uncertainty that they place (impose) upon the forward production decisions of farmers.

It therefore becomes necessary to inquire why the markets for the different farm products vary so much in this respect. Is it because of fundamental differences in the amount of uncertainty inherent in the production and consumption of the various farm products? Or is it because of the way in which the different markets function given their existing organization and state of development?

On the basis of the knowledge we have regarding the fundamental components of uncertainty in its long-run setting, albeit very limited, I cannot find any convincing reasons for supposing that certain classes of farm products are inherently quite free from long-run uncertainty considerations while other farm products are necessarily burdened very heavily with such uncertainty.⁸ If we take the long view, why

⁸ At this point I have in mind those aspects of uncertainty that are inherent in those supply and demand developments that (gradually) change the values of farm products distinguished from those short-run aspects of uncertainty that have their origin in the over-all instability of the economy.

should the production and consumption of hogs be shrouded in so much more real uncertainty than that of milk? Why should the underlying situation with regard to corn be basically different from that of animal products generally, since virtually all of our corn is used to produce animal products? Nor do I see why cotton or wheat should be on a wholly different footing in this connection from that held by milk and other animal products. These observations, of course, do not establish the fact that no important differences exist on this score; however, they do create a presumption in favor of my position. Taking this view, I shall assume that each major farm product is subject in the long run to the same basic elements of uncertainty. On this assumption we shall examine further the different systems of farm prices. The hypotheses by which we will be guided may be put as follows: The variations in farm product prices that create uncertainty for farmers in making forward production plans differ importantly from one farm product to another because of the way in which the different markets are organized to minimize (or is it to maximize!) price variations and not because of intrinsic differences in the underlying uncertainty inherent in production (farm supply) and in the consumption of farm products.

IV. Market Response to Uncertainty Considerations

I know of no direct way of putting this hypothesis to a test at this time. We have neither the apparatus nor the necessary data. However, several indirect approaches may be indicated that afford some clues regarding the validity of this view. We may look, for instance, upon the role that stocks perform in the different markets and try to ascertain whether they in effect increase or decrease the price uncertainty in agriculture. We need to examine afresh the interrelations of spot and future prices for clues. Still other approaches may be indicated.

Take the function of stocks. What are the price effects that arise from the storability of a product? It is convenient for my purpose to describe two types of situations. The first of these is as follows: If the underlying conditions with regard to the distant future were consistent with stability, it can be shown that stocks will reduce the fluctuations of farm prices. Under these conditions, given a durable and a perishable product having the same price and income elasticities and confronted by like variations in supplies and demands, the price of the durable product will fluctuate less than will the price of the perishable commodity. Practically everything that has been written about commodity markets, including that which has appeared on the organized exchanges with spot and future transactions, has been

based, usually quite implicitly, on the above assumption with regard to underlying conditions. The broad outlines of the price effects of stocks under these conditions can be stated quite briefly. In the case of a highly perishable product, like cut flowers, for example, none of the variations that occur either in the supplies of or in the demands for this product can be counteracted in any way by stocks; on the other hand, with a more durable product, like corn, similar variations in supplies and demands can be cushioned by the accumulation and deaccumulation of stocks.

It is noteworthy that markets with future price transactions have not been developed for perishable products, but only for those where the product is sufficiently storable to permit carrying stocks forward through the period during which a given future is open. In short, future prices as they have developed in our commodity exchanges are merely an aspect of the same price-making forces that determine the spot price. The future price under these circumstances simply complements the spot price. The two sets of prices are highly integrated, with stocks acting as the integrating factor. This web of spot and future prices is broken under only one set of circumstances and that is when there are not enough stocks on hand to maintain a link between spot and future prices. When this situation occurs, carrying costs have no meaning⁹ for there are no stocks to be carried forward and the spot price, therefore, bears no necessary relationship to the lower limits to which the future price can fall. However, with this one exception, the spot price and the future price of a product measure the same supply and demand forces.

How much insight can one obtain with regard to our hypothesis by using this apparatus? Two observations are in order. First, as a theory for explaining the price effects of stocks, it is, to say the least, incomplete. As it stands it is inconsistent with some of the crucial facts regarding farm prices established earlier in this paper. The facts appear to be that over the years the prices of the more perishable farm products in general fluctuated less than have the prices of the more durable farm products. There is a strong presumption in favor of the view that the storability of a product in many instances has been a major source of price variability and of the resulting price uncertainty under discussion. The second observation pertains to the meaningfulness of a future price compared to a spot price to farmers in making their forward production plans. Purely as an indicator, the future price would not differ from the spot price except when there

⁹ To express this situation as one that entails "inverse carrying charges" is a statement without any economic content although it may be of some statistical interest.

were insufficient stocks to maintain the usual linkage between spot and future prices.¹⁰

We turn now to a second type of situation in examining the price effects of stocks. If the underlying conditions with respect to the distant future were essentially inconsistent with stability, it can be demonstrated that stocks will increase rather than reduce the fluctuations of farm prices. When circumstances are such that those who deal in farm products are motivated into becoming sellers as a consequence of falling prices and conversely as a result of rising prices, the storability of a product acts as a cause contributing to price variations. Again, for purposes of illustration, let us take a perishable and a durable farm product with the same elasticities against price and income and with the same production and (normal) consumption variations. Let us suppose that rising prices have induced dealers to become predominately buyers. In the case of a perishable product, like fluid milk, it is not possible to withhold stocks from the market by accumulating them; and accordingly, the supply variations inherent in the technical conditions of producing milk continue to determine the supply of milk made available. It cannot be disturbed by the actions of individuals and firms who want to increase their long position in commodities. Therefore only the variations in demands for current consumption can be altered.¹¹ Compare these price effects of stocks with those of a durable product like cotton. The supply of cotton is easily disturbed because buyers can readily accumulate stocks and thus withhold a part of the crop from cotton mills and from consumers.

This set of conditions and the consequences that they indicate in terms of price variations would support our guiding hypothesis. Given these conditions, it follows that markets for the more durable farm products are subject to more price variation than are the less durable products. Since future price contracts are available only for the more durable products, we would expect to find these products to be among those showing the larger variations and thus transmitting more price uncertainty to farmers as a result. Here, too, several observations may be made.

First, there are convincing reasons for believing that the reoccurring circumstances that give rise to the kind of price motivations that characterize the second of these two types of situations are very comprehensive and general in their scope. They pervade the economic climate of the whole economy; they are not specific to agriculture

¹⁰ Whether, when this exception occurs, the future price is a better or a worse guide for production depends on additional circumstances.

¹¹ In milk the resulting changes in the demand for milk are primarily those arising out of income effects.

or to any other major sector of the economy. They obviously are not more specific to some farm products than to others. What we observe is simply that the durable farm products are much more vulnerable to this over-all shifting of positions than are the perishable products.

A second remark pertains to the fact that as our economy has developed the opportunities open to individuals and firms for going long or short, with a view of "hedging" on short notice against a marked change in the value of money, have been progressively reduced. As this has occurred, it seems reasonable to suppose that those markets which still afford this opportunity have been put under additional strain. This is an aspect of the oft-repeated observation that inflexibility at one point forces more variations at those points where flexibility continues to exist. The inference is that the commodity exchanges may well have become burdened by some of this additional buying and selling motivated by conditions far removed from the specific supply and demand circumstances of the product per se.

It may be useful in closing to compare the position of the future price to that of the spot price to farmers. These inferences may be drawn from the argument advanced in this paper.

The spot price dominates the pricing of farm products. The future price is of minor importance, simply because it does not exist for most farm products. The output of agriculture in the United States consists predominantly of perishable products, and these do not have future price quotations.

For those farm products for which future prices are available the spot price is fully as reliable as a guide for production as is the future price because the future price and the spot price are not independent of each other; instead, they are highly integrated and therefore reflect the same market forces, with the one exception when current stocks are insufficient to provide the linkage that normally exists between spot and future transactions.

In the case of the exception noted above, the future price could be a better guide than the spot price for farmers in making their production plans. This suggests that if future transactions were developed for perishable farm products covering a time span sufficiently long to preclude the carrying forward of stocks, the future price under these circumstances would of necessity be essentially independent from the spot price. A development of farm product markets in this direction, it appears, could make the future price decidedly more meaningful to farmers in making production plans.

There remains, however, the disturbances that affect farm prices adversely that originate out of the instability of the economy as a

whole. These disturbances can and do express themselves more fully in markets with future prices than in markets with spot prices.

Do these disturbances establish such limitations on pricing farm products that it is not feasible to develop a system of markets that will provide farmers with a meaningful set of forward prices? Further inquiry into the problem posed by this question I must leave for another occasion, and also to others for their views and contributions.

THE INVESTIGATION OF ECONOMIC EXPECTATIONS

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Fifty years ago economists rather generally allowed themselves to ignore economic expectations by concentrating attention on the "static state." Today we talk a great deal about economic expectations, but how much do we know about their formation and their behavior? How much can we say about them that might not have been said by Alfred Marshall or by John Stuart Mill, or even by Adam Smith, if they had chosen to discuss expectations?

I. *The General Problem*

There are two broad lines of possible attack on the subject of economic expectations: the individualistic and the aggregative. In its fundamentals, the problem of individual expectations may be one for psychology rather than for economics, but the economist must not hesitate to go as far as he profitably can in considering the individual.

A good deal of information has been collected from time to time on economic expectations of individuals. Now and then someone becomes interested in the opinions of economists and makes a survey of their expectations regarding prices. Surveys of the expectations of businessmen have been made frequently, by various agencies. If these surveys had seemed to produce results of much practical or scientific value, they could and should be organized more systematically and made the business, perhaps, of the federal Department of Commerce.¹ Thus far, at least, it seems that the information gathered falls more in the category of news of current interest than in that of significant economic information.

Perhaps the information has lacked scientific value because the nets of inquiry have not been cast widely enough, or in the right quarters. Or perhaps the absence of recognized scientific significance reflects inadequacy of our perception rather than absence of real significance.

I have not made a search for serious analyses of data on individual economic expectations, but I think it safe to say that there have been few of them. There is one which comes to mind, however, and the results are worth noting. Some years ago Alfred Cowles made a

¹ The annual surveys of consumer finances instituted a few years ago by the Board of Governors of the Federal Reserve System are providing some information on consumer expectations and could easily provide more if the effort should seem worth while.

critical study of the economic expectations recorded by professional stock-market forecasters. The main conclusion which emerged was that these expectations had characteristics substantially identical with those of random guesses.² We shall see before we finish that such an observation is not necessarily evidence of poor forecasting.

Anyone who contemplates analysis of existing data on individual economic expectations, and especially anyone who proposes large-scale collection of more data, should consider certain difficulties that must be faced in their interpretation. First is the question of validity of the expressions of expectation. Many people will state expectations with great confidence, but evince no confidence at all when faced with a challenge to act on their stated opinions. Second is the problem of classifying persons queried in relation to the economic significance of any expectations which they may have. Some expectations of some people carry great weight in economic affairs, yet most expectations of most people carry little weight.

I do not mean these comments as deprecation of the study of individual expectations, but only to suggest that any other feasible approach needs consideration also.

II. *The Aggregative Approach*

The aggregative approach to study of economic expectations takes for analysis some recorded economic variable which reflects a sort of consensus of expectations. Many economic quantities are strongly influenced by expectations and some are little influenced by anything else. Prices of industrial stocks, for example, are predominantly reflections of economic expectations. They may be regarded as expectations capitalized at going rates of interest, and in that sense they appear to reflect both expectations and existing rates of interest—or should I say that the capitalization is at expected rates of interest? The price of a commodity future is even more clearly and specifically a composite measure of economic expectations.

When we undertake study of the behavior of futures prices as a means toward knowledge of economic expectations, we must consider the objection, or qualification, that a futures price is not precisely a composite measure of expectations. British writers, including such distinguished economists as Keynes, Kaldor, Hicks, and Hawtrey, have given the question a good deal of attention since Keynes advanced his "theory of normal backwardation" in 1930.³ They have disagreed somewhat, as economists are wont to do, but I think that they are

² Alfred Cowles, "Can Stock Market Forecasters Forecast?" *Econometrica*, July, 1933, pp. 309-324.

³ J. M. Keynes, *Treatise on Money* (New York, 1930), II, p. 143.

united in the opinion that the relation of a futures price to expectations may be expressed by the equation,

$$P_f = E - r, \dots\dots\dots(1)$$

where P_f is a futures price, E is some sort of combination of effects of individual expectations, and r is some sort of combination of (effects of?) individual risk premiums.⁴

This equation serves to indicate that in studying P_f we may learn facts about r rather than about E . That need not trouble us. If we find significant behavior characteristics, we shall know that they derive from corresponding characteristics in either E or r , or from some combination of both. We shall in fact find that the main characteristics derive from E expectations.

We may now profitably adopt the term "market expectation" as synonymous with "futures price." Firmly established habits of thought make it difficult to think of any price as resting primarily on expectations. By using "market expectation" as an alternative to "futures price," we may keep attention focused on the predominantly expectational quality of such a price. Because the term "market expectation" has no strongly fixed connotations, it should not be difficult to remember that, writing E_m for market expectation, its definition leads, by equation (1) to

$$E_m = E - r, \dots\dots\dots(2)$$

and therefore that market expectation is not precisely equivalent to E unless $r = 0$.

III. *Bias in Market Expectations*

Expectations may be defective in either or both of two respects: they may be randomly inaccurate or they may be biased. Let us consider first the evidence under the head of bias.

At the outset, however, I want to mention, and to set aside, one kind of aberration in futures prices which might be treated as bias; namely, the effects of corners and squeezes. Corners are, or were, consequences of an excessive freedom of enterprise which seems largely a thing of the past in American futures markets. The British grain trade has never permitted either corners or significant squeezes in its futures markets. Squeezes continue to occur in American futures markets, though they can and should be eliminated. Like corners, they involve gaining and exploiting a temporary monopolistic position. The monopolistic element produces effects of quite a different nature

⁴I give r a negative sign in equation (1) because we shall usually want to use that equation in interpreting statistical evidence arising under conditions where the effect of r , if r is not equal to 0, is to give $P_f < E$. On purely algebraic grounds it would be better to use a positive sign, recognizing that r may take either a positive or a negative value.

from the others we have to consider, and I choose not to try to deal with them here.

Bias itself may be of several sorts. I shall use a classification involving four categories of bias which will be defined as we proceed.

1. The kind of bias in market expectations which has received most attention in theoretical discussion and in statistical studies is what may be called "general bias." There has been a prevalent view in agricultural circles that futures prices of a crop tend to be depressed in the period of heavy marketing soon after harvest, and thereafter to advance, perhaps tending to be highest shortly before the next harvest. Theoretical analysis, moreover, has led to the opinion that some such behavior should be expected as a reflection of risk premium. Such was the argument of J. M. Keynes's "theory of normal backwardation," and similar conclusions were reached by Kaldor and other British writers who extended and improved on Keynes's theoretical analysis.⁵

Keynes himself held that "the statistics of organized markets show that 10 per cent per annum is a modest estimate of the amount of this backwardation in the case of seasonal crops. . . ."⁶ That statement is significant mainly as evidence of Keynes's opinion that an indication of the effective risk premium is obtainable from statistical calculations of general bias in futures prices. His acquaintance with the pertinent statistical studies was evidently superficial, for it is only data for short and unrepresentative periods which appear to support so high an estimate of general bias.

For Chicago wheat futures, the average general bias or "normal backwardation" cannot be estimated properly at over 2 or 3 per cent per annum. For Chicago corn futures, it may approach 5 per cent.⁷

⁵ Nicholas Kaldor, "Speculation and Economic Stability," *Review of Economic Studies*, 1939-40, pp. 1-27; J. C. R. Dow, "A Theoretical Account of Futures Markets," *ibid.*, 1939-40, pp. 185-195; Nicholas Kaldor, J. C. R. Dow, and R. G. Hawtrey, "A Symposium on the Theory of the Futures Market," *ibid.*, 1939-40, pp. 196-205; and Gerda Blau, "Some Aspects of the Theory of the Futures Market," *ibid.*, 1944-45, pp. 1-30.

⁶ *Treatise on Money* (New York, 1930), p. 143.

⁷ Holbrook Working, "Theory of the Inverse Carrying Charge in Futures Markets," *Journal of Farm Economics*, February, 1948, pp. 8-12. (The citation in footnote 18 there should read "p. 214.")

Detailed inquiry can bring out some curious minor characteristics of general bias. For example, the reference above examines an apparent general tendency for corn futures prices to rise slightly from May to August and to decline similarly from August to October. This, however, is probably a spurious indication of general bias, arising from the fact that exaggerative bias (to be considered below) operates mainly in the upward direction and occurs most often in July and August. Chicago wheat futures prices show an apparently true general tendency to decline slightly from the latter part of February to late March. ("Price Relations between May and New-Crop Wheat Futures at Chicago since 1885," *Wheat Studies of the Food Research Institute*, February, 1934, pp. 214-216.) There is also a quite prevalent tendency for the price of any future to rise slightly (perhaps about 1 per cent) during two or three weeks before the beginning of a delivery month, when many hedges are being transferred from that future to more distant ones. This

The small size of general bias indicated by a proper interpretation of the statistics raises an interesting theoretical question: Is the effective risk premium really so small; or is there actually a positive bias in expectations proper (the E of the equation $E_m = E - r$) which partially offsets the effects of risk premium? A good argument can be made for either interpretation. On the one hand, it is clear that speculators tend to be people who are not particularly averse to taking risks; many of them, like many people who enjoy gambling, may willingly accept even *positive* risk premiums. On the other hand, prevalence of the mistaken impression that futures prices tend to be strongly depressed in the period shortly after harvest undoubtedly produces a real positive bias in the price expectations of many individual speculators. Their bias could form the basis for a small positive bias in the consensus of expectations, E .

In any case, it is clear that any errors in market expectations which arise from general bias must be exceedingly small in comparison with errors from other sources.

2. We now turn to the sorts of bias which may result in large errors of market expectation. One of these may be called "conservative bias," and defined as a tendency for market expectations to delay in adjusting fully to new substantive information. When I was studying potato prices a good many years ago, I thought that I perceived such a bias, involving a tendency for prices to be too low early in the season following a short harvest and too high in the early part of a season following a large harvest, these errors being corrected more or less gradually as the season progressed. Those observations were based, of course, on spot prices of a commodity in which there was then no futures trading.

So far as I know, there has been no demonstration that such a tendency to conservative bias exists in prices of any commodity which has a prominent futures market, with one rather obscure exception. That exception is in wheat and is associated with what I called a "long cycle."⁸ Market expectations in wheat seem to have tended

tendency is chiefly noteworthy as a source of mistaken conclusions; it permits a combination of data for different futures in such a way as to give a much exaggerated indication of general bias over a period of a year.

⁸In applying the term (in "Cycles in Wheat Prices," *Wheat Studies*, November, 1931, pp. 1-66), I intended no implication of regularity of repetition, or periodicity.

People with a good deal of mathematical training accustomed to associate "cycles" with the perfect regularity of a sine curve, have often misinterpreted economists' discussions of cycles, I think. Economists have commonly used the term in the broad sense in which it may designate only the effects of a tendency toward oscillation following a disturbance, including oscillation so highly damped that one disturbance produces only a single perceptible "wave." It is hard to find a good alternative term to avoid possible misinterpretation by the mathematically-minded. "Fluctuations" will not serve because it is too broad, lacking the connotation of progress from one phase to another.

usually to respond very tardily to emergence of a large world wheat surplus, and sometimes also to respond tardily to shortage of supplies when low stocks at the beginning of a crop year have aggravated the seriousness of a poor crop.

On this interpretation, the "long cycle" in wheat prices is, or was, a reflection of conservatism in response to the stocks position. Possibly wheat market expectations will behave differently in the future, with the benefit of better information on actual wheat stocks. If so, the phenomena of the long cycle cannot continue to be taken as evidence of true conservatism of market expectations. They will have to be regarded as effects of bias related to inadequacy of information, to which we now turn.

3. Bias in market expectations arising from inadequacy of information is probably the main source of reliable profits for speculators. Many traders in futures markets give a great part of their attention to acquiring information which has not become generally available, and thus has not been reflected in market expectations. These traders, or the commission houses which serve them, gather crop information ahead of its reporting by public agencies; they study the weather reports and seek to predict effects of the weather on the crops, thus trying actually to base expectations on crop developments which have not yet occurred; and they have even employed a long-range weather forecaster to predict the weather several weeks ahead.

The tendency in futures markets, therefore, is for most classes of pertinent information to be brought to bear on market expectations with extraordinary promptness. Errors arising from failure to obtain or to use available information of known pertinence are small and very short-lived. There are, nevertheless, certain recognizable tendencies toward bias arising from failure to give due attention to available information. The bias associated with level of wheat stocks, mentioned above, may be an example. A clearer example, again from the wheat market, appears in the tendency for market expectations in the United States to give too little attention to much news from overseas.⁹

Critical studies of price behavior in other futures markets are needed before confident interpretation can be given the tendency of American wheat markets to ignore pertinent foreign news. Possibly there is a general tendency for any market to ignore events that are distant; but this conclusion should not be drawn too hastily on superficial evidence. There is much evidence to the contrary. It may

⁹ Perhaps the best evidence on this point is in Robert D. Calkins, "Price Leadership and Interaction among Major Wheat Futures Markets," *Wheat Studies*, November, 1933, pp. 35-70.

be that the wheat market is a somewhat exceptional case, and that its tendency to underestimate the importance of news from overseas arises largely from misapprehension, fostered by the fact that such news is usually unimportant for other grain markets in the United States, and persisting because of inadequacy of basic economic studies and education regarding the major price factors in wheat. When painstaking statistical research uncovers bias in market expectations, the results may deserve to be taken mainly as evidence that the research was needed to lay a basis for better functioning of the markets.

4. The main objectionable bias commonly charged against speculative markets is exaggerative bias—a supposed tendency for market expectations to respond excessively to day-to-day news and rumors and to generate unwarranted price fluctuations. As with so much of economic thought today, the current prevalence of this idea must be attributed in considerable part to the gifts for vigorous and picturesque expression of John Maynard Keynes. His statement, applied specifically to the stock market, that “we have reached the third degree where we devote our intelligences to anticipating what average opinion expects average opinion to be,”¹⁰ is a gem.

It takes no great amount of conversation with traders, when one can get on a basis of frank expression of ideas, to learn that many of them are mainly interested in anticipating the swings of opinion of others. This, however, is not necessarily objectionable; it may represent merely an extension over somewhat longer time intervals of the clearly useful function of the professional “scalper,” whose activities certainly tend to diminish price fluctuation and make a better market.¹¹ To pass judgment, we need to know the effects on price behavior.

One consequence to be expected from an excess of activity toward “anticipating what average opinion expects average opinion to be” is that price movements should develop certain recognizable patterns. Apparent confirmation that this occurs is readily found among traders. A good many of them are firm believers in the significance of “head-and-shoulder formations,” “resistance levels,” and the like. Before accepting their opinions as valid evidence, however, one may wish to reflect on the fact that these traders rarely wear an air of prosperity and that their ideas are generally scorned by more substantial participants in the markets.

¹⁰ *General Theory of Employment, Interest, and Money* (New York, 1936), p. 156.

¹¹ It came to me as a surprise, in discussion following presentation of this paper, that Professor Norton took his stand with those who think that the activities of scalpers have a bad rather than a good effect on price behavior. I welcome his remarks as evidence of the need for objective determination of price effects of speculative trading, including scalping. When opinions of competent observers differ so much as they do regarding the effects of scalping, it becomes clear that the issue is one which “informed judgment” is incompetent to settle. A fairly clear objective answer should be furnished by the “error-time test” proposed near the end of this paper.

If we turn to a study of actual price behavior for evidence of unwarranted fluctuations, we easily find many cases in which prices fell quickly after a rise or reacted promptly after a decline. This evidence of unwarranted fluctuations must also be regarded with suspicion. It is valid evidence only if accompanied by some proof that the fluctuations were not in fact warranted. Such proof has seemed very hard to come by; at least I know of very little published evidence on the subject which bears up under critical examination.

This inadequate sketch must serve for the present introduction of a large and difficult problem. I pass now to some specific evidence of exaggerative bias in market expectations.

The best possible evidence of unwarranted price fluctuation in a futures market is that frequently occurring price movements *associated with simple objectively specified conditions* have invariably been followed promptly by reverse movements.¹² For Chicago wheat futures prices, a specification involving only magnitude and rate of price change, with two theoretically reasonable qualifications regarding time of occurrence, serves to identify a class of price movements which have regularly been followed by approximately equal price reaction.¹³

There are four clear characteristics¹⁴ of the evidence on exaggerative bias in the United States wheat market which have special theoretical interest: (1) Evidence of exaggerative bias has been found only in connection with upward price influences, not with downward influences; (2) exaggerative bias accounts in large part for most of the conspicuous advances of United States wheat prices during a period of over sixty years; (3) most of the very largest price advances show no evidence of the presence of exaggerative bias; (4) the patterns of price reaction after emergence of exaggerative bias have varied systematically in close conformity with the degree of confidence or uncertainty necessarily attending the formation of expectations at the time.

On the important question of *explanation of the occurrence* of exaggerative bias in the wheat market, the facts are obscure. The ready inference that it is a general characteristic of prices in speculative markets and the more limited inference that it arises from the par-

¹² The qualifications of frequency of occurrence and simplicity of the specifications are necessary to exclude significant possibility that the observed association is mere coincidence. Better evidence would be furnished by direct proof that the initial price movement in each instance was not accompanied by conditions which warranted it, but in view of the variety and complexity of legitimate price influences, such proof is rarely possible, at least in the present state of our knowledge.

¹³ A fact which will carry special weight with statisticians is that the criteria of identification have worked as well in current use during the eighteen years since they were discovered as in application to the historical record. The confirmation has included evidence of validity of the qualifications regarding timing.

¹⁴ Details, which must be omitted here, may be found in Holbrook Working, "Cycles in Wheat Prices," *Wheat Studies*, November, 1931, pp. 18-24.

ticular class of public participation which occurs in the wheat market, must apparently be rejected. I have looked for similar evidence of exaggerative bias in corn and oats prices and have failed to find it.¹⁵

The best hypothesis which I can offer to account for the main facts now known is that exaggerative bias in wheat prices is related to another bias previously discussed: that it occurs largely because significant overseas news tends to be ignored or inadequately weighted in the American wheat market. Pertinent in this connection are the facts that exaggerative bias in wheat market expectations has occurred most commonly in connection with crop scares, and that the crop damage involved has always been in North America and almost always in the United States.

There is one feature common to all the kinds of bias that we have considered, except the first, which deserves to be noticed before we pass to the next section. General bias, being so small, probably should be regarded as evidence of a risk premium rather than of any true tendency to error in market expectations. The other kinds of bias all reflect errors in market expectation, even though bias arising from inadequacy of pertinent information may warrant no criticism of the market itself. These kinds of errors of expectation, moreover, all have the characteristic that a given error persists over a period of time and tends to diminish progressively after reaching its maximum.

This characteristic of the errors of bias is very clearly observed in the exaggerative errors of crop-scare cycles in wheat prices. In them, prices rise rapidly and excessively and then decline more or less gradually. In a case of conservative bias, the price movement is quite different from that in a case of exaggerative bias, but if one imagines the course which the price would have taken in the absence of bias, it becomes apparent that the error due to bias must usually develop rapidly and then progressively diminish. Bias owing to inadequacy of information is like conservative bias in all respects except cause.

IV. *Accuracy of Market Expectations*

Concentration of attention on bias in market expectations involves emphasis on the imperfections of expectation without due consideration of their relative magnitude. Excessive attention to bias, if I may say so, risks creating a biased impression. We should seek, therefore, to get a balanced view of the inaccuracies of market expectations.

The most perfect expectations possible in economic affairs must be subject to substantial error because the outcome depends on un-

¹⁵ It should be recalled, nevertheless, that in earlier mention of a peculiarity in evidence of apparent "general bias" in corn prices, I inclined to attribute it to existence of some exaggerative bias.

predictable future events. Market expectations, therefore, have a certain *necessary inaccuracy*. By necessary inaccuracy in market expectations I mean that irreducible minimum of inaccuracy which must result from response of prices to unpredictable changes in supply and in consumption demand schedules. An excess of inaccuracy over this minimum may be called *objectionable inaccuracy*.¹⁶

It may be helpful to consider an analogy. Imagine a rifleman shooting at a distant target equipped with an electrically operated mechanism by which the target is moved unpredictably just as the gun is fired. The inaccuracy of fire caused by movement of the target would be necessary inaccuracy in the sense in which we are speaking. Inaccuracy beyond that caused by movement of the target we call objectionable inaccuracy. The objectionable inaccuracy itself might be divided into two parts, one part arising from error by the marksman and the other attributable to inherent inaccuracy of the rifle, but we may ignore, for the present, any distinctions between kinds of objectionable inaccuracy and degrees of objectionableness.

The main concept involved in this distinction is an old one. It must have entered the mind of everyone who has given thought to the apparent imperfections of price behavior in "free" markets. The concept has naturally suggested to many minds the desirability of having determinations made of the respective relative magnitudes of what I call necessary inaccuracy and objectionable inaccuracy in specific markets. The methods which have been proposed for such determinations, so far as I am aware, have all involved, in principle, the determination of what ideal expectations should have been in individual instances.

Heavy difficulties must confront any attempt to get a valid measurement of necessary inaccuracy by direct estimation in individual instances. Such attempts should not be discouraged, for they might produce results of great value, if properly conceived and implemented. Nevertheless, it is highly desirable to find some simpler method of measuring approximately the relative magnitudes of necessary and of objectionable inaccuracy in market expectations, if there be any adequate simpler method. The remainder of this section will be devoted mainly to outlining a clearly feasible and fairly economical approach to the problem, which I think promises reliable conclusions.

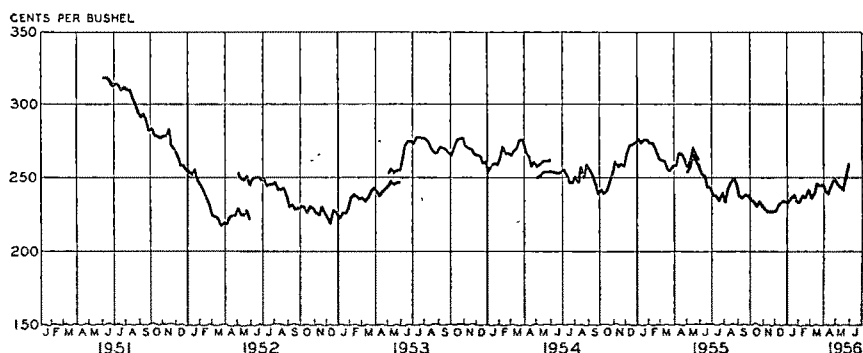
Figure 1 presents a sample of what a record of futures prices might look like, under slightly simplified conditions, if the market expecta-

¹⁶ Professor Waite, in discussion of this paper, suggested that this is not a good term, since all inaccuracy may be considered objectionable. I grant his point and shall welcome suggestions for a better terminology. Meanwhile, I hope that my meaning has been made clear and that readers will not find it too difficult to bear in mind that by "objectionable" inaccuracy I mean inaccuracy which reflects more or less discredit on the functioning of the market.

tions were subject only to necessary inaccuracy. In other words, Figure 1 purports to show a sample of what should be considered ideal behavior of a futures price. The sample is perhaps not the most representative one which could have been chosen. I had nine such samples conveniently available from which to choose and I chose to exhibit the second sample rather than the first one, because it serves better to illustrate that ideal price behavior may easily be mistaken for quite objectionable price behavior.

The essential basis for presenting Figure 1 as a sample of ideal price behavior in a futures market is this: if the futures prices (market ex-

FIG. 1.—PRICES OF "MAY WHEAT FUTURE," IF AFFECTED BY NECESSARY ERROR ONLY



pectations) are subject only to necessary inaccuracy, the price changes will be completely unpredictable. This proposition is readily proved from a consideration of the alternative condition in which price changes are predictable. If it is possible under any given combination of circumstances to predict future price changes and have the predictions fulfilled, it follows that the market expectations must have been defective; ideal market expectations would have taken full account of the information which permitted successful prediction of the price change. Since any predictability of price change is evidence of objectionable error in market expectations, a necessary condition for absence of objectionable error is that the changes be completely unpredictable.

An interesting consequence of this proposition is that, given an ideal futures market in which market expectations exhibited only necessary error, it would be impossible for any professional forecaster to predict price changes successfully. Apparent imperfection of professional forecasting, therefore, may be evidence of perfection of the market. The failures of stock market forecasters, to which we referred earlier, reflect credit on the market.

Changes which are completely unpredictable are, by definition, random changes, in the strict statistical sense of randomness. Statisticians

have had a good deal of occasion to deal with random numbers and have found that it is not so easy as might be supposed to get a series of numbers which is strictly random. Various devices have been tried for the purpose, including tossing of coins, throwing dice, and drawing numbers "at random" out of a hat or a bowl. Each of these methods, when carefully used, produces numbers which are near enough to pure randomness to satisfy many purposes, but each has been shown to produce numbers which tend to have some minor systematic characteristics which render them predictable in some small degree. In an effort to satisfy the most exacting requirements for randomness, L. H. C. Tippett, some twenty years ago, tried another device which proved quite successful. The results were published for the convenience of other statisticians in Tippett's *Random Sampling Numbers*.¹⁷

Figure 1 has been constructed from numbers drawn from Tippett's table. Since the requirement for our purpose is that the *changes* be unpredictable, the series used for the figure is not that given by the original random numbers but a series obtained by adding each number to the sum of all the preceding ones.¹⁸ The result is a series in which changes are purely random—what may be called a "random-difference series."

Finally, to avoid having attention diverted by purely superficial differences of appearance between the resulting series and actual records of futures prices, I have broken the series into sections representing one year each, have added a constant to all the numbers in each section, and have inserted designations such as would appear on a chart of prices of wheat futures. These final modifications are pure decoration and do not affect the essential characteristics of the series.¹⁹

There is only one essential respect in which the data of Figure 1 differ from what should be expected in a record of actual futures prices under conditions of ideal market expectations, if such a record were available; in Figure 1 the changes from point to point correspond to random numbers drawn from a single statistical population with a constant standard deviation. In any actual market the necessary inaccuracy of market expectations must vary from season to season and from year to year. Consequently prices representing ideal market expectations would show random changes with *variable* standard deviations. It is for that reason that Figure 1 was characterized as showing the consequences of purely *necessary* error under "slightly simplified conditions."

¹⁷ Cambridge University Press, 1927.

¹⁸ The frequency distribution of numbers drawn from Tippett's table is rectangular. To improve the correspondence with reality, I have transformed the distribution to an approximately "normal" one.

¹⁹ The series may be seen in its original form in "A Random-Difference Series for Use in the Analysis of Time Series," *Journal of the American Statistical Association*, March, 1934, p. 13, Chart I, where the data here used are designated as applying to the years '06 to '10, inclusive.

Consider now the effects of *objectionable* error in market expectations. The effects may take a variety of forms, but perhaps the most reasonable assumption is that such errors would tend to produce a highly damped autoregressive series. (For present purposes, a sufficient definition of an autoregressive series is that it is a type of artificial time series in which random disturbances produce an appearance of irregular cyclical fluctuations, or oscillations.) Such a series represents the actual

FIG. 2.—PRICES OF "MAY WHEAT FUTURE," IF AFFECTED BY OBJECTIONABLE ERROR ONLY

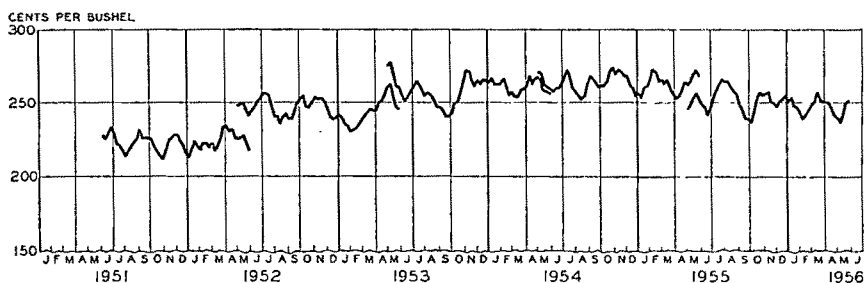
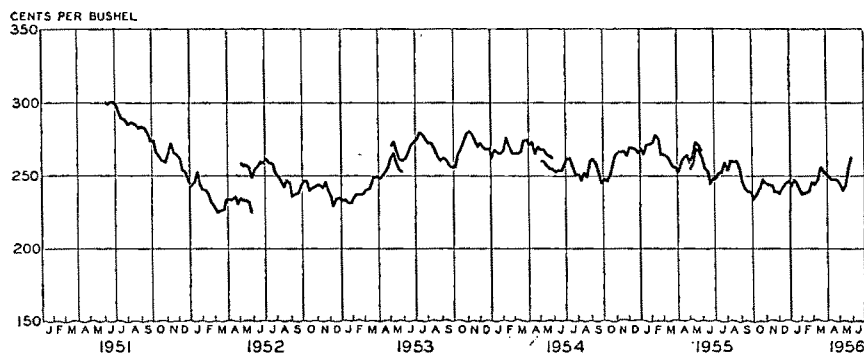


FIG. 3.—PRICES OF "MAY WHEAT FUTURE," IF AFFECTED BY BOTH NECESSARY AND OBJECTIONABLE ERROR



effects of objectionable errors of expectation better than a simple random series because the effect of any error is not confined to a single point in the series, but is spread over several adjacent points.²⁰ On that assumption, I take an autoregressive series which has been studied by M. G. Kendall²¹ as the basis for suggesting what a record of futures

²⁰ A high degree of damping must also be assumed because available evidence indicates that an error of expectation produces only one clear wave in prices; it does not initiate a prominent series of oscillations such as occurs in only slightly damped autoregressive series.

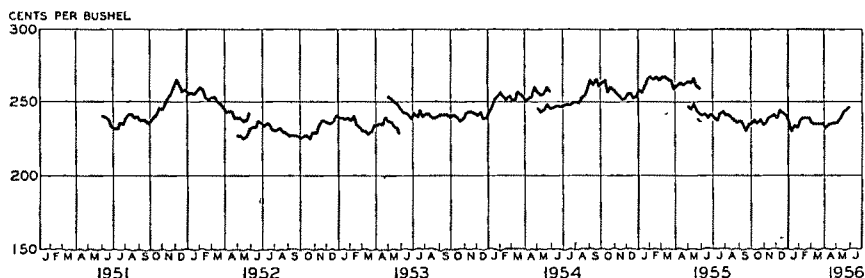
²¹ "On the Analysis of Oscillatory Time-Series," *Journal of the Royal Statistical Society*, 1945, p. 111, Table 9. I have obtained 260 numbers by repeating Kendall's numbers 6-25, inclusive, at the end of his series of 240 numbers. The series happens to have characteristics which correspond extraordinarily well with known characteristics produced by exaggerative bias in wheat prices.

prices might look like if the inaccuracy of market expectations arose wholly from objectionable error. The data, with some "decorations" like those given the random-difference series to produce a superficial resemblance to actual futures prices, are reproduced in Figure 2.

The inaccuracy of actual market expectations is not either wholly necessary inaccuracy, as assumed for Figure 1, nor wholly objectionable inaccuracy, as assumed for Figure 2, but is a combination of both sorts of inaccuracy. One such combination may be obtained by simply adding each number used for Figure 2 to the corresponding number used for Figure 1. The results, after a slight modification of scale, are shown in Figure 3.

Is it possible to determine from an actual price record whether the

FIG. 4.—PRICES OF "MAY WHEAT FUTURE," CONDITION TO BE ASCERTAINED



conditions correspond to those of Figures 1, 2, or 3? There may be some persons who will feel that the distinction can be made by visual judgment. Possibly it can. For a real test of the power of visual judgment, a fourth series should be introduced for classification. Figure 4 shows a series which has exactly the same essential characteristics as one of the three preceding ones. Which of the three does it correspond to?

For the investigation of actual market expectations, we need statistical methods which will discriminate as efficiently as possible among series like those in Figures 1, 2, and 3. Any method should also provide some sort of measure of degree of approach to, or departure from, the condition of minimum inaccuracy, represented by Figure 1. We shall never expect to find that condition perfectly met, and shall be interested principally in knowing how much objectionable inaccuracy is present.

The fundamental statistical basis for discriminating between necessary and objectionable inaccuracy is that necessary inaccuracy produces price changes among which all serial correlations tend to be zero, whereas objectionable inaccuracy tends to produce price changes which have certain serial correlations that differ significantly from zero. This is not the place to discuss the relative merits of various statistical tests

which may be used to discriminate between necessary and objectionable inaccuracy, but there is one possible test which is especially interesting because it exhibits directly certain characteristics which are important for economics. I shall call this test the *error-time relation test*.

It seems obvious that inaccuracy of expectations should be expected to be greater for expectations concerning the price a week hence than for expectations concerning tomorrow's price. Similarly, expectations concerning the price a month hence are believed to be less accurate than expectations concerning next week's price. In short, we expect inaccuracy to increase as the time-span of expectation increases. The manner in which inaccuracy tends to increase with time, however, differs according to the source of inaccuracy.

For convenience, let us assume that the basic causes of inaccuracy do not change in magnitude during the period considered. That was the assumption made in deriving the curves for Figures 1 to 4. For the case of necessary inaccuracy, represented by Figure 1, the assumption means that the distribution of expected errors of expectation over a given time-span is the same in June, for example, as in January, and the same in June of one year as in June of another year. In the case of objectionable inaccuracy, represented by Figure 2, the assumption means that the probability of occurrence of a new error of given magnitude is similarly constant from time to time.

Under this assumption of constancy of the sources of error, the increase of necessary inaccuracy as the time-span of expectation increases can be expressed very simply. If inaccuracy be measured by the variance (that is, the square of the standard deviation) of errors of expectation, necessary inaccuracy tends to be exactly proportional to time-span. In other words, the variance of necessary error is directly proportional to the time-span of expectation. This remains true, in theory, however long the time-span of expectation.

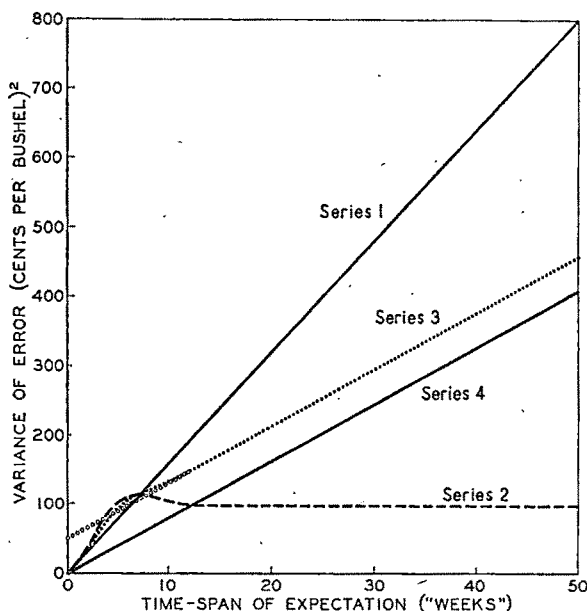
With objectionable error, the case is different. Starting from a low level for a very short time-span, the variance of objectionable error may increase, for a short distance, more rapidly than in proportion to length of time-span; but the rate of increase soon slows down and the variance of objectionable error tends to approach a maximum corresponding to a rather moderate length of time-span, and thereafter to increase not at all as the time-span increases. With objectionable errors of the sort represented in Figure 2, the inaccuracy tends actually to be somewhat smaller for time-spans greater than three months than for time-spans between two-and-a-half and three months.

The error-time relations corresponding to the data of the four preceding charts are shown, somewhat idealized, in Figure 5. If the variances plotted there were based on data for only the five "years" covered

by each of the preceding charts, the error-time curves would be quite irregular. The series shown in the preceding charts, however, are capable of indefinite extension. If they were considerably extended and the variances calculated and plotted, the resulting curves of error-time relation would still be slightly irregular, but they would conform very closely with the curves of Figure 5.

The error-time curve corresponding to the data of Figure 4, it will

FIG. 5.—ERROR-TIME RELATIONS



be noticed, is a straight line running through the origin of the chart, like that corresponding to the data of Figure 1. These are the distinguishing characteristics associated with presence of necessary inaccuracy only—the line of relationship is straight and passes through the origin of the chart. Presence of objectionable inaccuracy alone tends to give an error-time curve which flattens out after an initial rise. When both necessary and objectionable error are present, as in the data of Figure 2, an extension of the straight part of the error-time curve (the line of hollow dots in Figure 5) passes above the origin of the chart.

Some advantages might have been gained by drawing Figure 5 with both scales logarithmic. It would then have been found that presence of necessary inaccuracy alone gives a straight line with a slope of unity; presence of objectionable inaccuracy alone gives a curve which, after an initial rise, takes a slope of zero; and when necessary and objec-

tionable inaccuracy are combined, the (logarithmic) slope of the curve after its initial rapid rise is an index of the proportion of the inaccuracy which is necessary—a proportion which, in theory, may range between zero and 100 per cent in different circumstances.²²

This discussion of the definition of necessary and objectionable inaccuracy of market expectations and of the possibility of measuring the relative proportion of observed inaccuracy which is necessary must end without any very firm conclusions regarding the state of affairs in actual markets. A good deal remains to be done in testing the reliability of measurements, and in devising means to cope with some difficulties which I have not discussed, before definite conclusions can be reached. It may be worth noting, nevertheless, that such preliminary studies as I have made suggest that the inaccuracy of actual market expectations is composed mainly of necessary inaccuracy.

²² I did not use logarithmic scales for Figure 5 because I feared the advantages would be more than offset for present purposes by excessive emphasis on characteristics of the curves over the very short time-spans.

DISCUSSION

KENNETH E. BOULDING: I would like to offer a brief suggestion in regard to another possible approach to the problem of price expectations. I have elsewhere¹ suggested an identity relating the market price (p_q) of any exchangeable to the total stock in the possession of marketers (Q), the total stock of money in the possession of marketers (M), the average preferred liquidity ratio of the marketers (r_m), this being the ratio of money to the value of total assets at which the market is "cleared," and the corresponding preferred "exchangeable" ratio, r_q , this being the preferred ratio of the value of the exchangeable concerned to the value of total assets. The identity is²

$$p_q = \frac{Mr_q}{Qr_m}$$

The advantage of this identity is that it separates the "objective" from the "subjective" determinants of price— Q and M being objective, historically determined quantities, and r_m and r_q being subjective parameters descriptive of the states of mind, and therefore roughly of the expectations of the marketers. The expectation of a rise in price will raise r_q and lower

r_m . The ratio $\frac{r_q}{r_m}$ would therefore be a fair measure of the general state of

expectations in the market, a high value indicating a general expectation of a rise and a low value of a fall in the price of the exchangeable. This analysis could be applied with equal ease to spot commodity markets, to the market in futures contracts, or to any other security market. Knowing the price and the stocks of money and of the exchangeable concerned, the expectational ratio r_q/r_m could easily be calculated from the above identity. The importance of the expectational factor in various markets could thereby easily be gauged. I have only done the barest amount of preliminary work on this problem, but the close inverse connection between the prices and stocks of most commodities indicates that the expectational factor in price determination may be of less importance than is often supposed.

Professor Schultz's thesis is a challenging one. I confess to a feeling as I read the paper that we were presented with conclusions the evidence for which has not yet been published. Nevertheless, there are good theoretical reasons for supposing that price uncertainty will lead to too little capital and too much labor, and if it were only the uncertainties involved in the pricing of storable commodities, Professor Schultz's thesis would not be

¹ "A Liquidity Preference Theory of Market Prices," *Economica*, May, 1944, p. 55.

² A brief proof of this is as follows: let T be the total value of assets in the possession of the marketers. Then by definition at the equilibrium price, $r_m = \frac{M}{T}$ and $r_q = \frac{p_q Q}{T}$. Eliminating T between these two equations give us the above identity.

so surprising. I confess, however, that I have yet to be convinced that the peculiar nature of the uncertainties involved in the pricing of storable as against non-storable commodities leads to misallocation of resources, either as between industries or of different factors within the same industry. If this is indeed the case, it would seem to call for a considerable re-examination of our theoretical framework.

L. J. NORTON: Working states that the price of a grain future as an indicator of later prices of the same future may be affected by two sources of error: necessary and objectionable. The former reflect the effects of unpredictable future events and are distributed in random fashion; the latter tend to be so related as to cause irregular cyclical effects in the data. There is no serial correlation among successive errors of the first class but serial correlation which differs significantly from zero exists between errors of the second class. Being purely random the "necessary" inaccuracy in the present predicting the more remote is explained and need not concern us. But the causes of "objectional" inaccuracy would seem to be worthy of study. If "objectionable" is the proper description of such errors we should certainly attempt to find their cause.

Two possible causes occur to me. First, they represent the cumulative effects of waves of speculative activity based on too sanguine or pessimistic estimates of the future. These might arise from certain of the causes of bias noted in the latter part of Working's paper. In speculative markets it is easy for such periods to develop. In the actual practice of speculative markets it is to be assumed that scalpers would attempt "to ride" any short-time movements. Working's observation that professional scalpers tend to diminish price fluctuations, although in line with the orthodox position on the subject, seems to me to be an error. The scalper is looking for quick profits and tends rather to trade with the market and therefore accentuates fluctuations rather than dampens them down. Since such speculative movements tend to carry a market out of line with fundamentals, they may be expected to reverse themselves and then to move too far in the other direction. One might expect such errors to be serially correlated. If this explanation is valid, it is a natural result of a free market mechanism in which much trading is based on efforts "to take a ride" in the direction in which the market seems to be moving. These are objectionable but seemingly unavoidable in a market where anyone with the necessary capital to pay commissions and/or to maintain margins can operate.

Another possible explanation of these objectionable errors is that they reflect excessive or inadequate "risk premiums" which gradually become corrected as the future becomes the present. These may illustrate Working's "general bias." In recent years when risk premiums rather than carrying charges have characterized many combinations of successive futures, it has often been the case that when the cash-trading basis moved forward to a new future, the latter moved up to the level of the expiring future. The fears that had caused a risk premium in the forward future had not been realized. This same situation might operate within a particular future, the risk premium becoming less as the future runs its course. Risk premiums have

not been adequately studied and yet in recent years they seem to have been an outstanding feature of the markets in futures.

On the basis of Working's evidence, if I understand it, it appears on the basis of the first of his two tests, namely, that objectionable deviations appear to be irregularly wavelike, that the first of the two causes which I have suggested would be most tenable. But his second test, that the deviations rise to a maximum for a period of about 2.5 months, would seem to support my second suggested cause.

If these errors do reflect errors in estimating risk premiums, are they objectionable? Perhaps Working would say that the unobjectionable part of such errors is included in his necessary errors. But they may not all reflect random causes.

I wish to comment briefly on expectations as they now seem to operate in the pricing of a comparatively new American crop—the soybean. It has long been observed that the price of this crop has a much more marked seasonal rise than do the prices of the cereal crops such as wheat or corn. The “general bias” at harvest time seems to be high. Such a large seasonal variation is not correlated with similar seasonal variations in the spot prices of its two principal products—soybean oil and meal. This seasonal rise has been important to growers because it has made the crop attractive to store. Upon looking into the matter one finds that the forward prices on soybean oil and meal are typically at heavy discounts under their spot prices, particularly during the period of heavy accumulation of soybeans by processors; i.e., at harvest or shortly thereafter. The cash price of soybeans once accumulation begins reflects the risk premiums for taking forward positions in these products. The futures market for soybeans has not developed to the point where it can carry the heavy load of processors' inventory risk and in fact appears to reflect largely the forward prices on soybean products.

Do these large risk premiums indicate imperfect “forward sale” markets for soybean products? The buying side of the market for soybean oil seems to be made up of a few large refineries and perhaps some large-scale speculators; the market for soybean meal is based on what are called “resellers”; i.e., speculative cash firms. Would the development of a traditional type futures market on a large enough scale to carry the risk reduce the risk premium by spreading the risk more widely? These are questions which I am unable to answer. But I direct them to the attention of students of expectations. One advantage of a study of the soybean market is that institutions for risk bearing in connection with it are still in process of development.

On Schultz's paper I have only two comments. First, markets exist to perform various short-run functions and different products require different types of organization. The problems of marketing milk differ from those of selling hogs and these in turn differ from those in selling corn. Evolutionary experience has created different types of institutions. Markets have developed to distribute goods, to attract or discourage short-time variations in supply, to balance available supplies with current demands to facilitate carrying of stocks from one period to another. In doing these things they affect the use of resources over short periods and they often do it surprisingly well. The

corn market had an essentially different job in 1947-48 than it has in 1948-49. Last year it had to effect economies in the use of corn and make a short crop last until another was grown; it did so, although the carry over was very small as it should have been when a sharp reduction in price was to be expected. This year with a large crop, the market must expand the use of corn and it is apparently doing just that. The price is sufficiently low to lead to an increase in grain feeding of dairy cows, to heavy feeding of poultry for eggs, to a rapid winter-time expansion in chick production, to increased feeding of cattle, and to increased breeding of sows, particularly in all the fringe areas where the larger changes usually come. I take it that this is what allocation of resources means in the short run.

Second, Schultz speaks of the bad allocation of our resources in a long-run sense. He even classifies products in this respect but does not present any specific supporting facts. My view is that much of the bad allocation he talks about is the result of a vivid imagination. Farmers have a pattern of production, if nothing more than last year's program. Mostly, this is determined by physical resources. Modifications are always being made: feeding more heavily when it pays as at present; expanding livestock operations when feeding ratios are favorable; making long-time shifts with changing technical conditions, consumer markets, and price relationships.

A word of comment on each. If economists want an example of adjusting marginal returns to marginal costs, they can find it in the mass reactions of farmers in the intensity of feeding when grain-livestock price ratios shift. Their technical knowledge may be deficient but their mass reactions prove them to be "economic men."

It is fashionable to decry the tendency of farmers to increase numbers of livestock, particularly hogs and chickens when grain-product price rates become favorable. But it displays sound economic sense. It costs to carry over grain stocks. This the American public will discover if certain interests have their way in farm policy. The farmer wants income and he wants to avoid costs. So he proceeds to convert grain into livestock when grain is relatively cheap. Farmers know that this will eventually cheapen livestock, but they also know that the best use for a feed resource is to convert into a salable product as rapidly as the processes of nature permit. We will in twelve months raise another feed crop; perhaps it will be more abundant than the current one; the farmer does not know nor does anyone else.

The long-run trend of agricultural output exhibits a constant process of adjustment. If this is not a search for better adjustment in use of resources to changing technical and price relations, what is it? From 1910 to 1940, we experienced rapid increases in fresh vegetables, fruits, particularly citrus, oil seeds, milk, eggs, tobacco and very small increases in food grains, feed grains, and potatoes.

At any particular time there may be a bad use of resources in particular spots because of changes in technology or markets to which there has not been time for adjustment or because of an overadjustment in a particular direction. The war may have left us with some bad maladjustments but these cannot be blamed on the market mechanism. Barring these cases, I question the assumption that resources are badly maladjusted in agricultural production.

LIQUIDITY AND UNCERTAINTY

ASSETS, LIQUIDITY, AND INVESTMENT

By ALBERT G. HART
Columbia University

The theory of investment in new facilities by business firms is one of the thin spots in present-day economics. This should not be too surprising. For all our brave talk about developing dynamic theories, our dynamics is still fragmentary. And the investment problem is one which does not lend itself gracefully to static simplifications.

The difficulties in the theory of investment lie in the problems of liquidity and uncertainty around which this group of papers is organized. So I have taken as my assignment a sketch of investment theory growing out of analysis of these problems.

Much of the material for an adequate theory of investment is already at hand—but in a compartment of our knowledge which we tend to forget about when we theorize. A good deal of headway can be made with our theoretical problem simply by bringing over some things we know in our capacity as students (however amateurish) of corporation finance. This I attempt in the first two sections of this paper. On the other hand, much of the material we need must be assembled by special studies. This involves dropping our arbitrary assumption that plans and estimates are “not observable,” and setting out to observe them systematically. The third and fourth sections of this paper present the questions which investment theory has to ask of such an investigation as that now being launched at the University of Illinois.

I. Consequences of Imperfect Capital Markets

One of the oddities of interwar economic theory is that while rejecting the assumption of pure competition on commodity markets, it blandly adhered to the assumption of pure competition on the capital market. Yet everything we know about business finance stresses the imperfections of the capital market. A commodity market is at least theoretically capable of “pure competition”: the common fund of knowledge we have to attribute to dealers in assuming pure competition is all knowledge about the present. But the knowledge dealers must share to admit of pure competition on the capital market is knowledge about the future. Thus it is inherently uncertain, and the uncertainty extends to the proceeds of transactions currently engaged in. This uncertainty unavoidably makes competition on the capital market “im-pure.” Segments of the capital market, dealing in especially well-

secured short-term debts, have sometimes been marked off on a basis that admitted of pure competition—like the London bill market, the New York market for commercial paper, and the call-loan markets. But these islands of certainty have been raised above the flood only by intensifying uncertainty about junior debt securities and about equities in the firms whose debts came in question.

On the assumption of a perfect and purely competitive capital market, each firm is confronted with a market rate of interest at which it can get all the capital financing it chooses. (It is a symptom of the lightheartedness with which this assumption has been used that the term "borrowing" is used casually in most theoretical literature to cover financing in general—thus slurring over difficulties as to what the interest rate is when stock is floated.) The theory of investment is then focused on the equalization of this market rate with a "marginal efficiency of capital."

This simplification introduces a biased error. The barrier to additional financing for investment is ordinarily not an interest rate but the network of quantitative restrictions (based largely on rules of thumb used to protect creditors in the face of uncertainty) tagged "capital rationing." A firm's borrowing power of the sort most nearly conforming to the old idea of a purely competitive market is limited by its possession of unencumbered assets which can be pledged as collateral. More broadly, its borrowing power is limited by its net worth, in the light of creditors' standards of safe debt-to-equity ratios. In some instances, the firm's own standards of prudence (along the lines of reasoning sketched in Kalecki's "principle of increasing risk") may set a lower debt-to-equity ratio than creditors would insist on. Enlargement of the firm's net worth by equity financing is limited by the range over which the firm's entrepreneurial group is on terms of mutual confidence with potential stockbuyers. A gap between the values the entrepreneurial group and outsiders set upon the firm may prohibit equity financing; thus we have recently had loud complaints from corporation managements that to get in new funds equal to 5 per cent of the company's book-value net worth they must sell a 10 per cent participation in ownership—which they refuse as unfair to present stockholders.

The role assigned to interest rates in theories of fluctuations may make those theories seriously misleading. Theories which treat interest rates as the sole influence on investment working from the financial side are implicitly assuming that historical series of interest rates are good indexes of the intensity of capital rationing. They may have been so over much of the past, but certainly not all the time. We know that the drop of the average customer-loan rate at Federal Reserve member banks during the deflation of 1929-33 reflected a tightening of "credit

rationing" which pinched most those who formerly borrowed at high rates; and there may be other instances of divergence. The symptomatic importance of interest rates is weakened when policy intervenes via interest: the conservative complaint that policy "tries to raise the temperature by blowing on the thermometer" has a good deal of point in this case. This is an argument that works two ways, however. If interest is not really connected with investment in the way our theoretical simplifications would imply, we should not be unduly surprised at the apparent feebleness of low-interest policy as an investment incentive in the thirties. But neither should we infer that monetary policy is bankrupt. Measures which alter the working of capital rationing (like the cumulative changes in private balance sheets which resulted from war finance) may take hold strongly on investment without much affecting interest patterns.

Work on these relationships has apparently been intermittent. The Colm and Lehmann discussion of the "qualitative defect of the capital market"¹ is still worth rereading. We may expect more light from the study now being carried on by Homer Jones for the Committee for Economic Development.² But it will probably take more systematic evidence on actual practices to put us in the way of really fruitful theorizing.

II. *Dispersion of Liquidity Positions*

Another thing we know as students of corporation finance but forget as students of money and general theory is that liquidity positions diverge widely from industry to industry. In our theories of money and business fluctuations, we rightly attach special importance to change of price levels as the only kind of event which can change the real value of the public's stock of cash without the transactions involved in creation and retirement of credit. If the price level drops, the real value of the stock of cash is thereby raised (in total and relative to transactions requirements), and thus holders of cash come into possession of a surplus of liquid funds which they are free to invest in real assets. Thus being at a lower price level (as distinct from moving to one—a process with well-known deterrent effects) is pictured as increasing investment incentives. This argument underlies the more rational versions of the flexible-price policy for tempering economic fluctuations.

If we could safely assume a perfect capital market, it might not

¹ G. Colm and F. Lehmann, *Economic Consequences of Recent American Tax Policy* (New York: New School for Social Research, 1938), especially pp. 75-76.

² Homer Jones, "Investment Prospects," *Journal of Finance*, April, 1947, pp. 15-33, and mimeographs obtainable through C.E.D. Mr. Jones rests in part on Irving Fisher, "Debt-Deflation Theory of Great Depressions," *Econometrica*, 1934, pp. 337-357.

much matter in whose hands the increased liquidity from price level reduction would lie. We could then count on excess funds to find their way to the points where investment opportunity existed. With an imperfect capital market, though, we must face the possibility that the increased liquidity may be in one set of hands and the investment opportunity in another.

This possibility is not merely imaginary. We know that the driving force of any sustained revival after a depression must come from investment in durables: houses, office buildings, factories, transportation equipment, public utility plant, etc. A very large proportion of this sort of investment opportunity is in the hands of the industrial groups we call "real estate" and "transportation and public utilities." A glance at the figures in *Statistics of Income* will show that the balance-sheet patterns of these industrial groups are perverse. Typically, the corporations in these groups have very heavy short-term debts—for many subgroups far larger than cash plus short-term receivables—besides huge overshadowing long-term debts. In short, the negative liquidity of their debts is likely to outweigh the positive liquidity of their cash and receivables; so that they lose rather than gain liquidity by a reduction of price levels.³ Of course, a reduction of price levels must increase liquidity all the more elsewhere in the economy. But unless the deflation process includes putting these concerns through bankruptcy (lightening their debts by turning them into equities), this gain in liquidity may do nothing for durable-goods investment in these key sectors. This greatly reduces the merit of a flexible-price policy, in my judgment. For such concerns have a great deal of power to resist bankruptcy—and everything they do in the course of this resistance accentuates the transitional pains of the deflation process by which prices are ground down to lower levels.

III. *Some Areas of Ignorance*

Having looked at some of our underutilized knowledge, I turn next to some crucial points where the profession has too little knowledge of facts about the firm for effective theorizing. I draw up this catalogue at some personal risk. For of course when I say, "We do not know," I mean in the first instance, "I do not know"; and on every point I mention there must be many economists who are better informed. But subject to correction, I allege that each item in the catalogue is one where we urgently need more and better fact finding and not merely better dissemination of findings.

These "areas of ignorance," of course, are not totally unexplored.

³ Some sample figures appear in my paper in the forthcoming *Studies in Income and Wealth*, Vol. XI (New York: National Bureau of Economic Research, 1949).

The trouble is that our knowledge is spotty—suitable for exploding rash allegations that this or that never happens, but not systematic enough to give us any reliable judgment as to what patterns are representative. This spottiness of knowledge about the firm, in my judgment, explains the drift toward chaos in enterprise theory. We know just enough to make us suspect that traditional simplifications have introduced analytical bias, and that no scheme of simplifications can be unbiased for all problems; but we do not know enough to find new simplifications which will be reasonably bias-free relative to any of our major problems. This sort of knowledge, besides, may tempt the less ill-informed into a logical swindle. It is all too easy to point out in one chapter that if we adopt a certain hypothesis it affords a simple interpretation of certain scraps of evidence (which we do not allege are representative), and then argue in the next chapter as if the hypothesis has been demonstrated.

Now to my catalogue.

1. How systematically are forward-looking plans of firms for operations and for investment embodied in documents? How uniform is the "horizon" of forward planning for different aspects of the business plan? Where uncertainty must be faced, how far do the documents contain explicit plan-variants for different contingencies, and how far do planners pretend to have single-valued plans (with flexibility only between the lines)?

2. How systematically are plans tied back to explicit estimates of future conditions? Are these estimates formally adequate to support the plans, or do we find detailed estimates of some factors used in combination with mere impressionistic hunches about others? How far do admittedly arbitrary projections of recent experience fill the role of estimates? How explicit are planners about the margin of error in different estimates?

3. How stable are standards for judging whether estimates justify plans? There is reason to suspect that tentative decision comes first and rationalization afterwards in the case of pet projects of influential men in a firm. How much readiness is there to drop the project (rather than warp the analysis) if rationalization of such pet projects turns out badly? Are proposals from operating subordinates tested by the same standards? Are standards stable in the business cycle? Or do rationalizations about the rate of return over cost in a given project pass muster in easy times which would be rejected when cash is tight?

4. How far do firms accept estimates at second hand, and how far do they formulate (or at least audit) estimates at home? Are estimation procedures (or sources of outside estimates) slow changing or are they subject to frequent impulsive changes in response to waves of opinion?

How far can we trace changes in businessmen's estimation patterns to definite actions or utterances by government officials, trade associations, "business leaders," politicians?

5. What sort of provision do firms make for revising estimates and plans as experience develops? How near the "horizon" of existing estimates and plans do they come before looking ahead to a more remote "horizon"? How far do organizational rules about the making of various decisions conduce to carrying on under a plan after experience shows it is inappropriate? How far is replanning routinized, and how far is it a matter of meeting emergencies? How systematically is experience scrutinized for evidence about the bias of existing estimation procedures? For evidence about the bias of existing standards for the validation of investment projects?

6. When investment opportunity apparently is lacking, does this mean that the operating people in management have run out of promising projects, or only that the financial people in management have interposed a veto? Anybody who lives with any sort of physical apparatus (or organizational apparatus for that matter) can always see how he could do a more workman-like job if his tools were better—unless perhaps when operations are very slack—so that it is a tempting hypothesis that investment opportunity always exists at the grass roots, and that any apparent shortage of opportunity reflects finance. This hypothesis needs testing.

7. How objective is investment opportunity? Are the investment opportunities seen by one firm largely of such a character that if that firm lets them pass they are not available to anybody else? Or are they predominantly of such a character that one firm's oversight (or concession to financial difficulty) is another firm's opportunity? Chances to develop improvements under existing patents, for example, must go in the first class; chances to build apartment houses in rising neighborhoods may go in the second. Can we form reliable impressions on the composition and relative weight of the two classes of opportunity?

This is an area where economic research can succeed only if workers from other social science fields are brought in as collaborators. The fact is that there is a hiatus in the basic chain of dynamic reasoning. The situation in January results from plans laid in December, and those plans from estimates based on experience before December. Our central hypothesis that business maximizes something gives us a method of deriving plans from estimates. But the link in the chain which takes us from experience to estimates is not pure economics. We need to find out how estimates are made.

While economists can list questions to which they need answers, as I have just done, our professional training does not equip us to translate

those questions into a workable questionnaire for field work. Time after time we find that field studies on economic motivation have been so inexpertly designed or carried out that those who find the results uncongenial can pick them to pieces. The remedy lies in building up teams which include both economists and specialists in "attitude studies." This was the procedure in the Cowles Commission study of price control (one of the few real successes in this branch of economic research) and will be the procedure in the University of Illinois study I referred to above.

IV. Some Hypotheses on the Relation of Liquidity to Investment

It would be easy to go on indefinitely with this list of questions. But I think it may be more helpful if I veil my further professions of ignorance in the form of a structure of hypotheses which have a certain plausibility—and which if they still look plausible after the factual investigations scheduled for the next few years ought to be serviceable in analyzing business fluctuations and in framing policy proposals.

In broad terms (as Dr. Marschak's paper makes clear), the problem is one of choices about the composition of a balance sheet. The firm is presented with a field of choice: any asset can be increased only by shrinking some other asset, by increasing some liability, or by building up net worth. Each possible balance sheet (mixture of assets and liabilities) represents a cluster of possible futures which will arise in different contingencies; and choice among balance sheets is made in terms of preferences among these probability clusters.

This can be made more concrete by picturing choice in terms of a conflict between earnings and liquidity (as we do in analyzing banking). Building up earnings via additional operating assets means either surrender of earnings hoped for from bull speculation in nonoperating assets, or impairment of liquidity by borrowing, or impairment of liquidity by reducing cash. (Equity financing will be looked at in a moment.) Setting some value (with the dimensions of a rate of interest) on liquidity, prospective earnings from operating assets to be acquired must cover that value. It is customary to speak of prospective earnings being "discounted for uncertainty" in such a calculation. This makes sense if prospective earnings are valued by the most probable (modal) outcome and if most other contingencies are less favorable. It may also make sense if earnings are the expectation value obtained under a procedure of estimation which is believed by the firm's planners to have an optimistic bias. Such an optimistic bias probably exists in practice—if only because leadership qualities in a personality seem to be associated with a sanguine temperament; so that the process of business promotion probably selects optimists. In any event, error consists

largely of forgetting factors we ought to bring into our estimates; and on general psychological principles we should expect unpleasant considerations to be the easiest to forget. But a presumption that such a bias exists is far from being a demonstration that a blanket correction for such bias goes into estimates. The common assumption of "risk aversion" seems to me very flimsily supported. This whole question of "uncertainty discount" is another matter that cries aloud for intelligent and systematic investigation in the field.

The conflict between liquidity and earnings, though, must not be exaggerated. For in relation to investment decisions, which are long run, it is absurd to take a strictly short-run view of "earnings." But in a longer-run view, liquidity can contribute to earnings. In the first place, there is possible gain in bear speculation on the future prices of the operating assets in which the firm is considering investing: the same asset bought presently at \$95,000 will yield more than if bought now at \$100,000. In the second place, liquidity contributes to earning power by increasing the firm's ability to adapt its policies to changing circumstances. For example, a firm which is liquid enough to be able to buy ahead of requirements can expect to pay a lower average price for storable inputs than if it were forced to buy from hand to mouth. Furthermore, investment is likely to involve a whole chain of improvements, spread out over time; liquidity is a safeguard against losing the benefit of early improvements because of inability to complete the program if the business does not go as well as expected meanwhile. This safeguard is all the more important because a firm which lacks liquidity is exposed to a landslide of calamities if an initial loss impairs its credit standing.⁴

From the standpoint of the theory of fluctuations (which is probably the main place to apply a theory of investment in the firm), it looks like a promising simplification to regard investment as dependent on three sets of necessary conditions—three tests an investment proposal must pass. (It does not much matter in what order we consider the tests, all being essential.)

1. It must be financible, which is where liquidity comes in. Funds must be in sight either from cash on hand, or from business savings during the period when the investment is made, or from borrowings, or from equity financing. Provision of funds must not infringe rules of prudence set up in relation to minimum safe cash holdings, maximum safe ratios of debt to equity, or maximum safe "dilution" of the control of the entrepreneurial group. Neither must financing be at the expense of other projects which look better by the other tests.

⁴ Cf. my argument on the "principle of linkage of risks" in relation to the demand for cash: A. G. Hart, *Money, Debt and Economic Activity* (New York: Prentice-Hall, 1948), pp. 198-203.

2. It must promise a net return over cost better than is offered by marginal nonoperating (investment or speculative) assets or by debt reduction. (This implies that the proposal is part of a plan under which future liquidity will be safeguarded and complementary future installations provided.)

3. It must be timely. This means ordinarily that there must be some pressure on the facilities to be expanded—some sort of bottleneck to be relieved—at present or at the date for which installation is planned. Otherwise depreciation and maintenance on the new asset would be likely to run to waste for a while. This presumption may be overcome by expectation of a price rise, or by a chance of saving operating costs by replacing antiquated outfit.⁵

This list of tests, it is only fair to say, has a rather conservative sound—except that the importations from corporation finance permit replacing the condition that the market rate of interest does not exceed the prospective rate of return over cost. This replacement—which is what gives us a list of tests rather than a solution expressed as a marginal equalization—is in line with the healthy tendency of recent theorizing to regard equilibrium as an “equals-or-exceeds” relationship rather than an “equals” relationship between variables.⁶ The notion of rate-of-return-over-cost changes meaning somewhat as uncertainty is brought into the analysis—notably through the recognition of future liquidity as a contributor to earnings. The separation of the second and third points suggests a hopeful way to simplify applications, since lack of timeliness may be sufficient to adjourn a discussion on the rate of return over cost. But the new wine of reinterpretation does not seem to burst the old bottles of analytical classification; and I opine that the further reinterpretation resulting from the investigations I recommended above will also leave the old bottles serviceable.

V. *Suggestions for Macro-Economic Models of Business Fluctuations*

This point of view toward investment has several implications for the design of “models” through which to study fluctuations. I confine myself here to three.

1. We must avoid simplifying our models down so far that key monetary considerations drop out. The horrible example I have in mind is the attempt to apply Keynes to fluctuations by setting up a model in which the public has no assets except cash and government securities. Then limits to monetary influence are found where “liquidity prefer-

⁵ This test of timeliness includes by implication comparison of the investment project under study with projects for providing equivalent facilities in alternative ways. Comparisons with different types of installations, under this scheme, are indirect, via comparison with cash.

⁶ Cf. Paul Anthony Samuelson, *Foundations of Economic Analysis* (Cambridge: Harvard University Press, 1947), pp. 75-76.

ence becomes unconditional." This means, in this model, that a limit is found beyond which expanding cash cannot inflate bond prices. But after all, the barrier here results from the fact that expansion of cash cannot increase future cash returns from bonds. It would be a much harder task to show that expansion of cash could not inflate assets whose cash return is inflatable and whose potential owners suffer from capital rationing—for instance, farm land or houses. In a model which contains as assets (say) cash, bonds, machines, and houses, it will immediately appear that bonds are more like cash than like houses.

2. We must formulate our models so as to give explicit recognition to plans and estimates. There has long been a tendency to shy off from plans and estimates on the ground that they are "not observable." If estimates rest on experience of "observables" and plans rest on estimates, why not "dynamicize" our economic equations simply by setting up models where past observables (prices, outputs, etc.) enter the determination of present observables? The objections to this simplification should be overwhelming: First, it wastes evidence, since estimates and plans are in fact observable if we adopt correct procedures. Second, and more important, it can yield correct results only if estimation patterns are invariant relative to the economic changes we wish to study. But this invariance is unpalatable—both in the light of scattered evidence on estimation procedures and in the light of the well-known failure of "lagged" relationships found in one period to stand up in the next period.

Explicit formulation in terms of plans and expectations has major advantages. It corrects the widespread bias toward treating "psychological" factors in fluctuations solely in terms of "errors"—a bias which wastes the Keynesian and Swedish insights about the role of self-fulfilling expectation-patterns in giving an upswing or downswing momentum. And it makes room for the use of uncertainty itself as an explanatory factor.

3. Having recognized estimates and plans, we must go further and give explicit recognition to uncertainty. There is a strong tendency among theorists to push uncertainty under the rug by setting up "certainty equivalents" to uncertain expectations. But the existence of certainty equivalents must be challenged on principle: there are many things people do because of uncertainty which they would not do for any certainty whatsoever. Several phenomena which are of key importance for fluctuations cannot be adequately explained without explicit recognition of uncertainty. This holds in particular for cash holdings, differentiation of asset portfolios, and inventory policy. Changes in degree and type of uncertainty also bear importantly on fluctuations; if we push uncertainty out of sight we are reduced to

vague talk about "confidence." The rising momentum of a boom may be due largely to standardization of opinion which reduces speculative and precautionary demands for cash and the slowing down later on largely to widening dispersion of opinion. The effect of politics on business, again, must take hold largely through its influence on the uncertainty attached to business estimates.

Economists have to simplify whenever they can do so without bias. Simplifications which do away with explicit reference to plans, estimates, and uncertainty may be reasonably free from bias for some problems about operations with existing equipment, but they can rarely be unbiased for investment problems. Here there is no substitute for a pattern of dynamic analysis which takes the forward-looking thinking of businessmen into account and seeks its simplifications in observed patterns of such thinking rather than in its neglect.

ROLE OF LIQUIDITY UNDER COMPLETE AND INCOMPLETE INFORMATION

By JACOB MARSCHAK¹

Cowles Commission for Research in Economics

1. It is proposed to study how the demand of rationally acting men for a commitment (an asset or a contract) depends on its liquidity under various degrees of available information.

1.1 While the actual behavior of men is not rational, the implications of rational behavior, or the so-called "pure economic theory," deserve study for two reasons: (1) as a possible first approximation to the description of actual behavior; (2) as a set of practical norms, to be used by firms or governments.

2. *Liquidity*

Let x_0, x_1 = rates of input of a certain service (in man-hours, machine-hours, etc.) in "years" 0 and 1 respectively. If $x_1 > x_0$, and the asset or contract that yields the service is expanded, a price, P , is to be paid, per unit of input added. If $x_1 < x_0$, and the asset or contract that yields the service is reduced, a certain amount, Pl is released, per unit of input subtracted. The ratio $l(0 \leq l \leq 1)$ will be called liquidity. Of the cases drawn on Chart I, we shall consider line bb as sufficiently realistic, though cc is somewhat more general.

2.1 *Special forms*

2.1.1 Liquidity as *marketability* of an asset. Here Pl = second hand or scrap value of a machine (per machine-hour at maximum rate of use); the selling price of a (nonstandardized) real estate after advertising or agent costs, etc. In perfect market (single shares, bonds; grains) $l=1$. Note (on Chart I) that continuous line dd ordinarily used for monopoly does not meet our case as well as do cases bb or cc : the transition from the buying to the selling role involves a break!

2.1.2 Liquidity as *physical convertibility* of an asset. Here $l=1$ implies costless change of physical form or location. For raw materials, l is larger than for finished goods.

2.1.3 *Liquidity of contracts*. Here $l < 1$ if the dissolution of contract entails legal penalty or some other cost.

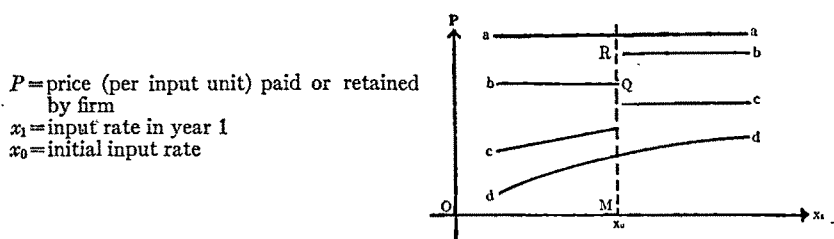
2.1.4 Liquidity and *nondurability*. It follows that if the contract's term is not longer than one "year," its liquidity $l=1$; and $l < 1$ other-

¹ With acknowledgments to Messrs. K. Arrow and H. Chernoff, of the Cowles Commission for Research in Economics and to Mr. James Tobin. The paper will be reprinted as Cowles Commission Paper, New Series, No. 37.

wise. Similarly, a plant with durability exceeding one "year" has $l < 1$.

2.1.5 Thus liquidity is a physical or institutional property of an asset or contract, similar to the proportion of raw material in a final product. It is the ratio of two contemporary prices and therefore independent of any price changes in the time between the buying and the selling of an asset, or between entering and dissolving a contract.²

CHART I



P = price (per input unit) paid or retained by firm

x_1 = input rate in year 1

x_0 = initial input rate

aa: perfect liquidity: $l = 1$

bb: imperfect liquidity (admitting discontinuity): $l = MQ/MR = \text{constant} < 1$

cc: ditto, l variable < 1

dd: imperfect liquidity (continuous case).

2.2 We shall assume a single kind of input (or a bundle of inputs tied by constant proportions between quantities and between prices; but see also 4.5). We shall regard it, at its buying price, as the *numéraire*; i.e., put $P = 1$.

2.2.1 If one drops this assumption, or at least admits preference for present versus future profits, then liquidity must be defined, not as a ratio between two money costs, but as a ratio between two marginal utilities (a "marginal rate of substitution"). See also 5.4.1, 5.4.1.2.

2.3 *Horizon* might be extended beyond two time units ("years") but this would not alter the essential results.

2.4 The *initial input* x_0 is identical with *investment*, up to a proportionality factor; viz., the maximum number of input-units (machine-hours, etc.) per year.

3. Degrees of Information

For brevity, the words "the firm knows" will be used instead of "the firm believes it knows." Suppose it considers a set $[u]$ of alternative events u_1, u_2, \dots . Denote by $[p]$ the set of probabilities p_1, p_2, \dots of these events. We can then distinguish four degrees of information about $[u]$ (besides obvious mixed cases):

3.1 The firm does not know $[p]$.

² G. H. Evans has privately made the interesting suggestion of describing a commitment as more or less "reversible." The older term "liquid" (as opposed to "frozen") has the advantage of being universally used. It alludes to the ability of liquid bodies, to change their form freely: cash (and to a lesser extent a share, a bond, or a stock of raw materials) is freely transformed into other assets.

3.2 As above, but it knows data permitting it to estimate $[p]$.

3.3 The firm knows $[p]$.

3.4 As in 3.3, and every element of $[p]$ is either 0 or 1.

3.5 The degrees 3.4, 3.3 we call *complete information*; in particular, degree 3.4 constitutes *certainty*. The degrees 3.1, 3.2 we call *incomplete information* (at least one of them seems to be what F. H. Knight calls "uncertainty"); in particular, degree 3.1 will be called *ignorance*.

3.5.1 Note that the extreme highest and lowest degrees of information do not involve probabilities; while the two intermediate degrees involve probabilities. We can thus distinguish between stochastic and non-stochastic cases of complete information; and similarly for incomplete information. The non-stochastic cases can be considered as special cases of the corresponding stochastic ones (e.g., by letting all variances vanish).

3.5.2 In both stochastic cases (3.2, 3.3) information is *sequential*: more is known in year 1 than in year 0. As will be seen, it may pay to postpone investment (i.e., to have a smaller x_0) and wait for more information.

3.5.3 Note that all probabilities involved are *subjective*.

3.6 The model can be extended to the case when probabilities are *degrees of belief* not depending on observed frequencies; provided the firm can make choices between bets.

3.7 Extension to "*ordinal probabilities*" is possible but will not be discussed here.

3.8 The rational man (1.1) maximizes the expected (=mean) value of utility.³

4. *Effect of Liquidity on Demand in Case of Certainty*

4.1 The firm *knows* (as in 3.4) that x input units will produce in years 0 and 1, a revenue of, respectively, $\rho_0(x)$ and $\rho_1(x)$. Write $x_1 - x_0 = y$. The firm chooses, at beginning of year 0, those values of x, y that maximize two years' profit $z = z_0 + z_1$ where $z_0 = \rho_0(x_0) - x_0$; $z_1 = \rho_1(x_0 + y) - x_0 - qy$, where $q = 1$ if $y \geq 0$; $q = l$ if $y < 0$.

4.2 *Problem*: Investigate the effect of l upon x and y for a given change in the revenue function.

4.2.1 Assume a one-parametric "shift" in revenue function, thus:

$\rho_1(x) = \rho_0(x + u)$ (i.e., total cost needed to produce a given revenue is changed by a constant).

4.2.2 We might, instead, assume a multiplicative not additive "shift"

³ See "Measurable Utility and the Theory of Assets" (mimeographed: Cowles Commission Discussion Paper, Economics 226, 226A), presented at Madison meeting of Econometric Society, 1948; abstract in *Econometrica*, 1949; von Neumann and Morgenstern, *Theory of Games and Economic Behavior*, Section 3.6, and Appendix to Second Edition.

and write for the revenue of the second year, $u \cdot \rho_0(x+y)$. Variations in u might be due to changes in production, as well as in the price-ratio between input and output. The latter case was suggested by A. G. Hart in "Risk, Uncertainty, and the Unprofitability of Compounding Probabilities" (in *Studies in Mathematical Economics and Econometrics*, in memory of Henry Schultz, 1942). The results are in essence the same as those obtained under assumptions 4.2.1. The most general case is $\rho_1(x) = \rho_0(x) + \delta \rho_0(x)$, where δ indicates functional variation. (See Kenneth May, "Technological Change and Aggregation," *Econometrica*, 1947.)

4.2.3 Assume, as on Chart II, that marginal revenue function is linear,

$$\rho'_0(x) = b - x/c; \quad \rho'_1(x) = b - (x+u)/c; \quad c > 0.$$

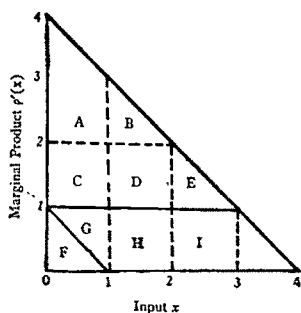
On Charts II-IV, $b=4$, $c=1$.

4.2.4 From now on we write x for x_0 ; $x+y$ for x_1 ; and ρ for ρ_0 .

4.3 The problem becomes: " \hat{x} , \hat{y} are values of x , y that maximize

$$\begin{aligned} z(x, y) = & a + bx - x^2/2c + a + b(x+y+u) \\ & - (x+y+u)^2/2c - 2x - qy, \end{aligned}$$

CHART II



Best inputs and profits under perfect liquidity and illiquidity.

It is known that marginal revenue function represented by line 44 in year 0 will shift by 3 input units (to line 11) in year 1. Input price = 1 throughout.

Case $l=1$ (perfect liquidity)

Best inputs: $x_0=3$, $x_1=0$;

Profits: $z_0 = A+B+C+D+E$

$z_1=0$

Case $l=0$ (perfect illiquidity)

If again $x_0=3$, $x_1=0$, then

Profits: $z_0 = A+B+C+D+E$

$z_1 = -(F+G+H+I)$

A better (in fact, the best*) choice is:

$x_0=2$, $x_1=1$; then

Profits: $z_0 = A+B+C+D$

$z_1 = -(G+H)$. Then total profit (z_0+z_1) exceeds that of previous choice by $(F+I-E)$.

* See Chart III B, with $u=3$.

where $q=1$ if $y \geq 0$; $q=l$ if $y < 0$; $a = \text{constant}$.

Express \hat{x} , \hat{y} as functions of both u and l ."

4.3.1 Especially, show that, given the shift $u > 0$ (decrease in total cost for given revenue), \hat{x} is smaller when $l=0$ than when $l=1$: Chart II.

4.4 Solution of 4.3. Putting $\partial z / \partial x = \partial z / \partial y = 0$, solve for x , y , when $y \neq 0$:

$$\begin{aligned} y &= y(u, q) = 2c(1 - q) - u \\ x &= x(u, q) = c(b - 2 + q). \end{aligned}$$

When $y=0$, see (γ) below.

Case 1. Perfect liquidity: $l=1$, hence $q=1$.

$$\left. \begin{aligned} \hat{x} &= x(u, 1) = c(b - 1) \\ \hat{y} &= y(u, 1) = -u \end{aligned} \right\} \text{ See Chart IIIA.}$$

Case 2. Imperfect liquidity (See Chart III B): $0 \leq l < 1$.

(α) for values of u such that $y(u, 1) \geq 0$:

$$\begin{aligned} \hat{y} &= y(u, 1) = -u, \text{ as in Case 1} \\ \hat{x} &= x(u, 1) = c(b - 1), \text{ as in Case 1} \\ u &\leq 0; \end{aligned}$$

(β) for values of u such that $y(u, 1) < 0$ and that even $y(u, l) < 0$:

$$\begin{aligned} \hat{y} &= y(u, l) = 2c(1 - l) - u \\ \hat{x} &= x(u, l) = c(b - 2 + l) \\ u &> 2c(1 - l) > 0. \end{aligned}$$

(γ) for values of u such that $y(u, 1) < 0 \leq y(u, l)$:

$$\begin{aligned} \hat{y} &= 0, \\ \frac{dz(x, 0)}{dx} &= 0, \quad \hat{x} = c(b - 1) - u/2 \\ 0 &< u \leq 2c(1 - l). \end{aligned}$$

4.4.1 Meaning of the intervals (α), (β), (γ) in terms of *capacity*:

In (α) the shift of revenue function calls for an increase in input after year 0. This means also an increase in capacity as the asset acquired or contract made at the beginning of year 0 was such as to suit the initial input \hat{x} .

In (β) the shift calls for decrease of input. In this case, if the second-hand price of the asset = 0, part of capacity created in year 0 may remain unused during year 1; that is, it was not absurd to plan in year 0 for unused capacity in year 1.

In (γ) the shift in revenue function would call for decrease of input if the second hand price equaled the price of new equipment; but with a lower, or even zero, second hand price it is preferable to start with smaller capacity in year 0 and to maintain it unchanged, and fully used, in year 1.

4.5 Problem of *several* (n) kinds of inputs (and, correspondingly, several kinds of assets or contracts), each having different liquidity $l^i (i=1, \dots, n)$. Find the best initial inputs (proportional to investments) \hat{x}^i and the best increments \hat{y}_1^i, \hat{y}_2^i for successive years 1, 2, \dots as functions of l^i and of a known shift u in the revenue function. It is conjectured that (as on Chart III B), $\partial \hat{x}^i / \partial l^i \geq 0$.

4.6 We conclude that differences in the liquidity of various assets affect the relative demand for them even under conditions of certainty. Examples: till money, and pipe-line stocks held to provide for predicted changes (seasonal or otherwise) in production and market conditions.

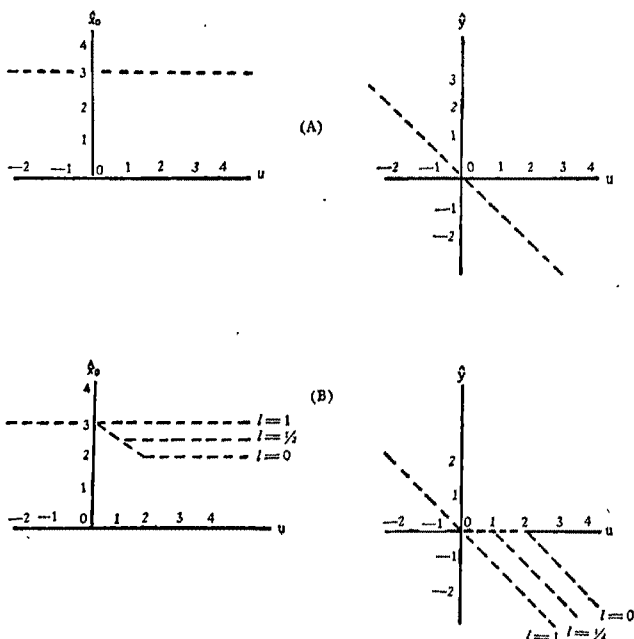
5. Effect of Liquidity on Demand in the General Case of Complete Information (3.3)

CHART III

Optimal initial input (\hat{x}_0) and optimal change in input (\hat{y}) as functions of a known shift (u) in revenue function.

(A): Perfect liquidity ($l=1$)

(B): Varying degrees of liquidity ($l=0, \frac{1}{2}, 1$).



5.1 Notation: Lower case letters: nonrandom variables (quantities and functions)

Capital letters: variables that are in general random

Italic letters: quantities (mostly)

Greek letters: functions (mostly)

5.2 At the beginning of year 0, the revenue function $\rho(x)$ for that year is known, but the revenue function for the next year is random. Specifically, replace equation in 4.2.1 by the following:

$$\rho_1(x) = \rho(x + U)$$

where the "random shift" U has probability density function $\phi(U)$.

5.3 We shall assume $EU=0$ and denote EU^2 by σ^2 . We shall discuss how the best investment (best initial input) \hat{x} depends upon liquidity l and upon riskiness σ^2 of the contract or asset in question.

5.4 The two-years' profit z in 4.3 becomes

$$Z = Z(x, Y) = \rho(x) - x + \rho(x + Y + U) - x - QY,$$

where $Q=1$ if $Y \geq 0$; $Q=l$ if $Y < 0$. Here Y , and therefore Q , is random, because the choice of best value for Y , to be made at beginning of year 1, will depend upon the value which the shift U will have taken by then. At the beginning of year 0, the firm determines:

(a) the ("best") value \hat{x} of x , and

(b) the ("best") function $\hat{\eta}(\)$,—

such that if $x = \hat{x}$ and $Y = \hat{\eta}(U)$, then the expectation EZ has a maximum, i.e.

$$EZ[\hat{x}, \hat{\eta}(U)] \geq EZ[x, \eta(U)]$$

for any x, η (cf. 4.3), or

$$EZ[\hat{x}, \hat{\eta}(U)] = \text{Max}_x \text{Max}_\eta EZ.$$

5.4.1 $Z=Z_1+Z_2$ is used here as a simple case of utility function of money profits instead of a more general one, say $\omega(Z_1, Z_2)$: cf. 2.2.1. Expanding ω into Taylor series (as in Marshall, *Principles*, Math. Appendix IX) we approximate $E\omega$ by a linear combination of EZ , the variances of Z_1 and Z_2 (sometimes called "risks"), their correlation, etc. The firm is thus concerned with higher moments and not only with the means of profits. This does not contradict 3.8.

5.4.1.1 In the expansion just mentioned, the coefficient of the variance of Z_i ($i=1, 2$) is $\partial^2\omega/\partial Z_i^2$. Only if this is negative, i.e., if the marginal utility of profit decreases with profit, is there "risk aversion" (cf. Friedman and Savage, *Journal of Political Economy*, 1948).

5.4.1.2 Further generalization of the utility function might make it dependent on other commodities besides money—e.g. honor (for a firm's manager), consumers' goods (for the householder).

5.4.1.3 However, the simple utility function $\omega(Z_1, Z_2) = Z_1 + Z_2 = Z$ and hence the maximizing of EZ , will suffice to illustrate the main propositions of this paper.

5.4.1.4 The behavior in 5.4 is equivalent to the Neumann-Morgenstern optimal strategy.

5.4.1.5 We have here "sequential information"—the particular value taken by U becomes known after the end of year 0. The result of 5.3 will mean that if liquidity of the asset is low, it may pay to wait with investment (i.e., to invest in another, more liquid asset), pending further information.

5.5 We shall show that

$$(5.5.1) \quad \text{Max}_x \text{Max}_\eta EZ[x, \eta(U)] = \text{Max}_x E\text{Max}_\eta Z[x, \eta(U)];$$

for this, it suffices to show that

$$(5.5.2) \quad \text{Max}_\eta EZ[x, \eta(U)] = E\text{Max}_\eta Z[x, \eta(U)].$$

Suppose that

$$(5.5.3) \quad \text{Max}_\eta Z[x, \eta(U)] = Z[x, \hat{\eta}(U)];$$

that is, for any U, x, η

$$Z[x, \hat{\eta}(U)] \geq Z[x, \eta(U)];$$

multiplying by $\phi(U)$ (nonnegative) and summing over U ,

$$EZ[x, \hat{\eta}(U)] \geq EZ[x, \eta(U)],$$

$$EZ[x, \hat{\eta}(U)] = \text{Max}_\eta EZ[x, \eta(U)];$$

This, by (5.5.3) is equivalent to (5.5.2); hence (5.5.1) is proved.

5.6 Therefore, to find $\hat{x}, \hat{\eta}$, we proceed as follows: solve

$$(5.6.1) \quad \partial Z(x, Y) / \partial Y = 0$$

for Y , obtaining $Y = \hat{\eta}(U)$, which involves x . Substituting,

$$(5.6.2) \quad EZ(x, Y) = EZ[x, \hat{\eta}(U)] = EZ,$$

now a function of x only. Then solve for x the equation

$$(5.6.3) \quad dEZ/dx = 0;$$

it will be satisfied by $x = \hat{x}$.

5.7 Apply this to the case of linear marginal revenue function (4.2.3.)

The problem in 4.3 becomes:

"Write $Y = \eta(U; l)$; $V = x + Y + U$; then \hat{x} and $\hat{\eta}(U; l)$ are a constant and a function that maximize $EZ(x, Y)$, where

$$Z(x, Y) = a + bx - x^2/2c + a + bV - V^2/2c - 2x - QY,$$

where $Q=1$ if $\eta(U, l) \geq 0$; $Q=l$ if $\eta(U, l) < 0$; and $EU=0$.

Express \hat{x} as a function of liquidity l and of the parameters of the probability function $\phi(U)$, such as the variance, $\sigma^2 = EU^2$, of random shifts of the revenue function. In particular, find the signs of $\partial \hat{x} / \partial l$ and $\partial \hat{x} / \partial \sigma$."

5.8 Proceeding as in (5.6.1), we obtain, for the three intervals analogous to those in 4.4:

(α) for $U \leq c(b-1) - x$:

$$\hat{\eta}(U) = c(b-1) - x - U; \quad V = c(b-1); \quad Q = 1.$$

(β) for $U \geq c(b-l) - x$:

$$\hat{\eta}(U) = c(b-l) - x - U; \quad V = c(b-l); \quad Q = l.$$

(γ) for $c(b-1) - x < U < c(b-l) - x$:

$$\hat{\eta}(U) = 0; \quad V = x + U;$$

5.9 Proceeding further, as in (5.6.2), (5.6.3):

$$\begin{aligned} dEZ/dx &= b - 2 - \hat{x}/c + \int_{m_1}^{m_l} [b - (\hat{x} + U)/c] \phi(U) dU \\ &\quad + \int_{-\infty}^{m_1} \phi(U) dU + \int_{m_l}^{\infty} l \phi(U) dU = 0, \end{aligned}$$

where $m_l = (b-l)c - \hat{x}$, $m_1 = (b-1)c - \hat{x}$.

5.9.1 Note: At perfect liquidity $l=1$, the equation in 5.9 yields

$$\hat{x} = (b-1)c,$$

independent of the random shifts, and identical with the solution in 4.4, Case 1.

5.9.2 On Chart IV, the equation in 5.9 is plotted for $\phi(U)$ normal and for $l=0$ and $l=1$: \hat{x} is expressed as a function of σ .

5.10 To find the sign of $\partial \hat{x} / \partial l$, differentiate the equation in 5.9 with respect to l , and write for the cumulative probability function

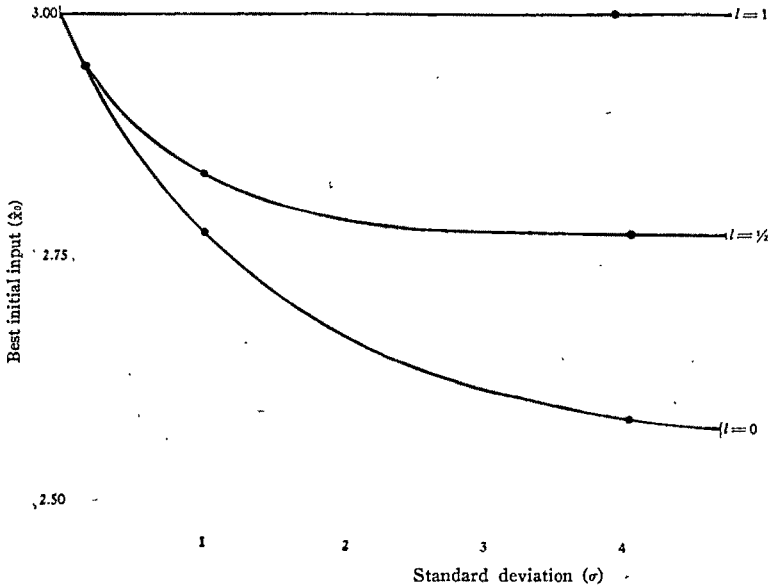
$$\int_{-\infty}^m \phi(U) dU = \psi(m) \geq 0.$$

We obtain

$$(\partial \hat{x} / \partial l) \cdot [1 + \psi(m_l) - \psi(m_1) + c\phi(m_l)] = c\phi(m_l);$$

and since $c > 0$, and $m_1 < m_l$, $\psi(m_1) < \psi(m_l)$, $\partial \hat{x} / \partial l \geq 0$. That is, initial investment increases with liquidity.

CHART IV



Dependence of best initial input (\hat{x}_0) upon liquidity (l) of the asset or contract, and upon the known standard deviation (σ) of the probability distribution (known to be normal, with zero mean) of a future shift in the production function.

5.11 It can be further shown that investment \hat{x} decreases with increasing variance of the random shift. By introducing $U^* = U/\sigma$, a random variable with zero mean, unit variance and probability density function $\phi^*(U^*)$, Herman Chernoff has shown that for continuous distribution functions,

$$\frac{\partial \hat{x}}{\partial \sigma} = - \int_{n_1}^{n_l} U^* \phi^*(U^*) dU^* / \left[1 + \int_{n_1}^{n_l} \phi^*(U^*) dU^* \right] \leq 0,$$

where $n_i = m_i/\sigma$ ($i=1, l$). (The equality sign applies when $l=1$: see 5.9.1).

5.12 Chernoff has shown, moreover, that investment \hat{x} is bounded as follows:

$$(5.12.1) \quad \text{as } \sigma \rightarrow 0, \hat{x} \rightarrow c(b-1);$$

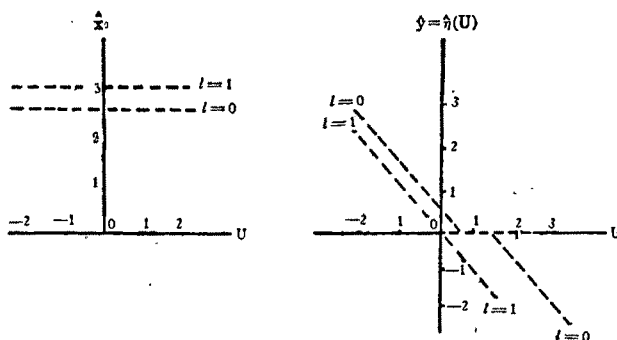
$$(5.12.2) \quad \text{as } \sigma \rightarrow \infty, \hat{x} \rightarrow c[b-2+l+(1-l)\psi^*(0)],$$

where $\psi^*(m) = \int_{-\infty}^m \psi^*(U^*) dU^*$, so that, for symmetrical functions, $\psi^*(0) = 1/2$.

While (5.12.1) simply repeats the result obtained in the case of certainty (4.4: Case 2, for $u=0$), the result (5.12.2) is interesting: as the variance of the random shift increases indefinitely, investment does not fall to zero; for example, if $l=0$ and the distribution is symmetrical, \hat{x} approaches $(b-3/2)c$. (See Chart IV for the more special case of normal distribution and for $b=4$, $c=1$.)

CHART V

Limiting values of best initial input \hat{x}_0 and best change in input $\hat{y} = \hat{\eta}(U)$ as functions of a random shift U , symmetrically distributed with zero mean,* and with standard deviation increasing indefinitely ($\sigma \rightarrow \infty$); two alternative degrees of liquidity ($l=0$; 1) of the asset or contract in question are assumed.



* Note: Since this chart is constructed for mean $U=0$, it can be compared with the case of certainty ($\sigma=0$) plotted on Chart III, for $u=0$ only. The comparison is as follows:

$$\begin{array}{lll} \sigma=0; 0 \leq l \leq 1 & : & \hat{x}_0 = 3, \quad \hat{y} = 0 \\ \sigma \rightarrow \infty; l=1 & & \hat{x}_0 = 3, \quad \hat{y} = \hat{\eta}(0) = 0 \\ \sigma \rightarrow \infty; l=0 & & \hat{x}_0 = 2\frac{1}{2}, \quad \hat{y} = \hat{\eta}(0) = \frac{1}{2} \end{array}$$

6. The Case of Ignorance

6.1 We proceed now to the cases of incomplete information, and begin with the simple, non-stochastic one: the case of ignorance (3.4, 3.5.1). Consider two examples:

6.1.1 The firm knows the revenue function $\rho(\cdot)$, the liquidity l of the asset or contract in question, and a set $[u]$ of values, that the shift u of the revenue function can take; but it has no information from which to estimate probabilities attached to each of these values. It has to choose x , y .

6.1.2 Same as before but, instead of a set $[u]$ of constants, the firm knows that $\phi(U)$, the probability distribution of the random shift U , has zero mean and is normal, and that standard deviation σ is an element of a set $[\sigma]$ of constants.

6.1.3 The two cases 6.1.1 and 6.1.2 can be considered as special cases

of the following: The form and all but one parameters of $\phi(U)$ are known. In case 6.1.1, $\sigma=0$, and EU is unknown; in 6.1.2, $EU=0$, and σ is unknown.

6.2 If the unknown conditions (u, σ) were determined by a rational opponent in a game, a rational choice by our firm, in case 6.1.1, would be as was shown by von Neumann and Morgenstern: it would "minimax the loss," i.e., make a choice of x, y such as to obtain:

$$\text{Min}_{x,y} \text{Max}_u [-z(x, y; u)];$$

and, in case 6.1.2, it would "minimax the expected value of the loss,"

$$\text{Min}_{x,y} \text{Max}_\sigma [-EZ(x, y(U); \sigma)].$$

6.2.1 In words: In a game, choose a policy (x and y , or x and η) such that, even if the unknown conditions (u or σ) should turn out to be the ones most adverse to this policy, the expected gain (z or EZ) would be at least as large as the expected gain that would result from any other policy, and from conditions most adverse to that other policy.

6.3 If conditions are not determined by an inimical rational opponent, there is no reason for this maxim of behavior. L. J. Savage has suggested (orally) that not the loss but the "regret" (or "miss") be minimized. In the case 6.1.1, the "regret," r is the difference between the gain actually obtained and the gain that would be obtained if choice had been made in full knowledge of conditions. We shall work out this case.

6.4 We define regret:

$$\begin{aligned} r &= \text{Max}_{x,y} z(x, y; u) - z(x, y; u) = r(x, y, u) \\ &= z(\bar{x}, \bar{y}; u) - z(x, y; u). \end{aligned}$$

The firm chooses x, y so as to achieve

$$\text{Min}_{x,y} \text{Max}_{u \text{ in } [u]} r(x, y, u) = r(\bar{x}, \bar{y}, \bar{u}), \text{ say.}$$

We are interested in the effect of liquidity l upon best investment, \bar{x} . Obviously if $l=1$, or if u cannot take positive values the case is identical with 4.4, Case 1: the best investment in this case will be called \bar{x}_α . Consider now the case $l=0$ and show that then the regret will be minimax at a certain value of \bar{x} , $\bar{x} \leq x_\alpha$: investment in an illiquid asset is equal to or smaller than that in a liquid one, all other things being equal.

6.4.1 Suppose first that $[u]$ consists of two values only: u_α in the interval (α) , and u_β in the interval (β) , as defined in 4.4; $u_\alpha \leq 0$, $u_\beta > 2c$. Then, using the respective optimal inputs (call them $\bar{x}_\alpha, \bar{y}_\alpha; \bar{x}_\beta, \bar{y}_\beta$), given in 4.4, we can compute the corresponding maximum profits, $\bar{z}_\alpha, \bar{z}_\beta$, and hence obtain the regrets, $r_\alpha = \bar{z}_\alpha - z_\alpha, r_\beta = \bar{z}_\beta - z_\beta$. The difference

$$r_\alpha - r_\beta = u_\alpha - c + \rho(x + y + u_\beta) - \rho(x + y + u_\alpha),$$

is an increasing function of $x+y$. It vanishes when $x+y$ has a certain value, w (say), depending on u_α , u_β . Therefore $r_\alpha >$, $<$, $= r_\beta$ according as $x+y >$, $<$, $= w$. Minimax regret is therefore found as follows: minimize r_α for the cases $x+y > w$; minimize r_β for the cases $x+y < w$; then choose the smaller of the two minima. Note that r_α can itself have two minima, one at some $y \geq 0$, and one at some $y < 0$; and similarly for r_β . It turns out that all minima considered are either at $x = \hat{x}_\alpha = c(b-1)$ or at $x = \hat{x}_\beta = c(b-2)$. And, depending on the size of the possible shifts u_α , u_β , either \hat{x}_α or \hat{x}_β yields the smallest of the minima. Therefore the minimax regret is obtained at an investment value which is $\leq \hat{x}_\alpha$, and thus best investment under illiquidity is smaller than or equal to the best investment under full liquidity.

6.4.2 This result is easily shown to be true also in the more general case: when $[u]$ contains any number of elements, belonging to all three intervals defined in 4.4: (α) , (β) , and the intermediate interval (γ) . Again, minimax regret will be obtained when investment is either \hat{x}_α or \hat{x}_β : the possibility of events of intermediate kind (γ) has no effect!

6.4.2.1 It follows that, for example, a rational man ignorant of the probabilities of three alternative events should *not*, in general, apply the rule that each of these events has probability $1/3$. Thus the classical doctrine (Laplace) which declared events with unknown probabilities equiprobable cannot be a guide to action.

7. *The General Case of Incomplete Information*

7.1 We now modify the example 6.1.2 as follows:

The firm knows the revenue function ρ_0 , the liquidity l of the asset or contract in question, and knows that $\phi(U)$, the distribution of random shifts, is normal with zero-mean. In addition, it can obtain, in the year 0, certain data, to be denoted by D_0 , that are related to the future random shifts U . For example, the numbers D_0 may be sample previews of crops. Denote the (unknown) joint distribution of D_0 , U by $\delta(D_0, U)$. In particular, δ may be characterized by variances and regression coefficients. To choose a policy means to decide how to react to information D_0 , i.e., what functions ξ , ϵ will yield optimal initial investment $X = \xi(D_0)$ and optimal increment in year 1, $Y = \epsilon(D_0)$, determined on the basis of information in year 0. Applying the principles of 6.4, we have to choose ξ , ϵ so as to obtain

$$\text{Min}_{\xi, \epsilon} \text{Max}_{\delta} (\text{Max}_{\xi, \epsilon} EZ - EZ),$$

where $Z = Z[\xi(D_0), \epsilon(D_0)]$ and $\delta(U, D_0)$ is an unknown joint distribution function.

7.2 Again, it is conjectured that if the optimal decision functions—say, $\hat{\xi}$, $\hat{\epsilon}$ —are actually evaluated for our economic examples, they will turn out to depend on liquidity.

7.3 In 7.1, the only data considered were those available at beginning of year 0, D_0 . Actually, further data, say D_1 , will become available in the course of that year. Then D_1 must be included as argument in the joint distribution function δ and in the decision function ϵ . This will affect the optimal values of ξ , ϵ .

7.3.1 In particular, it will probably turn out that if the liquidity of the asset is low, it is advantageous (i.e., it will "minimax the regret") to have less of it during the year 0, in order to *wait for additional information*. The fact of "sequential information" (3.5.2) is likely to be of importance for the theory of liquidity as was already seen in the (stochastic) case of complete information (5.4.1.5).

7.4 This section (7) merely outlines a program. Its problem is, in fact, identical with the general theory of statistical inference, interpreted as the theory of a choice of action rather than choice of hypotheses. (The statistician is merged with the entrepreneur.) This is the approach of Abraham Wald (continuing the work of J. Neyman and E. Pearson); for most recent writings, see Wald, "Foundations of a General Theory of Sequential Decision Functions," *Econometrica*, 1948; and Arrow, Blackwell, and Girshick: "Bayes and Minimax Solutions of Sequential Decision Problems" (to be published in *Econometrica*).

DISCUSSION

MILTON FRIEDMAN: As Hart, in particular, has taught us, uncertainty can lead entrepreneurs or consumers to take actions that they would not take in response to any certain situation; it can, as it were, introduce a qualitatively new dimension into economic behavior. Uncertainty need not, however, have this effect; for certain classes of problems there may exist a set of data, which, if known with certainty, would lead to the same action as each possible uncertain situation.

This distinction between the class of uncertainty problems for which there are certainty-equivalents and the class for which there are not, needs emphasis for two reasons. First, the distinction is basic in economic theorizing about uncertainty and, in particular, in understanding the difference between the papers by Hart and Marschak. Economic theorizing that is implicitly or explicitly in the certainty-equivalent class cannot possibly interpret or rationalize certain kinds of phenomena. Second, and on the surface at variance with the first point, the range of analysis that falls into the certainty-equivalent class is far broader than might at first appear, and so is the range of phenomena capable of explanation by such analysis.

Hart's discussion of different kinds of securities is an example of an economic analysis that would have no place in a world of certainty. In such a world, bonds and stocks would be completely interchangeable, and no corporation would issue both. Analysis in terms of certainty-equivalents cannot explain the forces that lead corporations to make the kinds of decisions about how to finance themselves that they make in our uncertain world. Again, there is no certainty-equivalent that can rationalize the existence of insurance companies; in a world of certainty, they would have no place. Uncertainty is of the very essence of phenomena like these. Any attempt to explain them without introducing uncertainty leaves them like the grin without the cat.

To exemplify phenomena explainable in terms of certainty-equivalents, consider an entrepreneur committed to producing a perishable product, and suppose that a substantial period must elapse between the final decision how large a cost to incur in producing it and the sale of the product. There may be uncertainty about both the price at which he can sell the product and the output he will get for a given cost. Yet, in analyzing the entrepreneur's decision how much to produce, we should be inclined—and I think correctly—to suppose that we could replace the uncertain future situation with certainty-equivalents. There is here no qualitatively new dimension introduced by uncertainty. Uncertainty simply acts to change the data on which the entrepreneur makes his decision. A somewhat paradoxical example of the use of certainty-equivalents is provided by the analysis by Savage and myself of choices among uncertain alternatives.¹ The hypothesis we use—as does

¹ Milton Friedman and L. J. Savage, "The Utility Analysis of Choices Involving Risk," *Journal of Political Economy*, August, 1948, pp. 279-304.

Marschak in the paper under discussion—is that individuals seek to maximize expected utility. Corresponding to each uncertain alternative—that is, to each possible probability distribution of incomes—there is some expected utility; and there is some certain income whose utility is equal to this expected utility. This income—which need not of course be the expected income—is then the certainty-equivalent.

I conjecture—though I have no rigorous proof—that Marschak's results in the paper under discussion are another example of an analysis in which uncertainty is not of the essence of the problem discussed. Marschak deals with a special case of a familiar general problem, given, however, a rather novel twist. The general problem is that of an entrepreneur who produces two products (in Marschak's case, output in the two time periods) by means of two resources (in Marschak's case, the services used in the two periods). The novel twist is that Marschak makes the two resources interrelated in supply, so that the price of one depends on the quantity used of the other. This kind of interdependence arises, for example, when the price a university administrator has to pay to add a particular person to his faculty depends on what other persons he is able to induce to join his faculty. In Marschak's case the interdependence arises out of the imperfect liquidity of the asset, so that the (effective) price that has to be paid for the services of the asset in the first period is greater if a smaller quantity is to be used in the second period than if the same or a larger quantity is to be used in the second period.

The essential economic implication of illiquidity in Marschak's analysis is therefore that the marginal cost of output in one of his periods is made dependent on the output in the other period. Because Marschak restricts himself to a single service, the only reaction the entrepreneur can make to a change in the expected data for the second period is to change his output for the first. A change in liquidity changes the marginal cost of output in one period for certain values of output in the second. With a given degree of liquidity, the introduction of uncertainty about the shift in the production function has the same effect. All that seems relevant in this case is the *expected* marginal cost of output, and any change in this through uncertainty should be capable of being duplicated by an appropriate selection of a known shift in production function and associated liquidity. This is the basis of my conjecture that, for any particular anticipated probability distribution of shifts in the production function and any particular liquidity, there always exists a known shift and degree of liquidity (not necessarily equal to the originally assumed liquidity) that would yield exactly the same production plans.

I do not mean by these comments to deprecate Professor Marschak's results. It is important to know the effect of liquidity, given complete certainty, to know whether increased uncertainty is equivalent to increased or decreased liquidity, and so on; and his analysis of these questions is ingenious and profound. My purpose is rather to point out what seems to me a fundamental difference between his analysis and Hart's, and to illustrate by

his work the great generality of certainty-equivalents. If I am right in my conjecture, Marschak is analyzing uncertainty of a kind that is still in the world of certainty-equivalents, while Hart's main plea is that we venture into realms in which certainty-equivalents do not exist. Both have much to teach us: Hart, that there are important economic phenomena in which uncertainty introduces a qualitatively new dimension; Marschak, that we must beware of supposing too readily that this is so for any particular problem, since highly complicated problems involving uncertainty may turn out, on analysis, to be soluble within the world of certainty-equivalents.

I should like to turn to a point of very different character. It has to do with Hart's agenda for research and must, because of limitations of time, be stated rather dogmatically. I do not believe his agenda for research is fruitful. In particular, I venture to predict that few really useful results will be obtained by his implied proposal to fill in the areas of ignorance listed in part three of his paper by asking questions of businessmen, and that this negative judgment will hold, no matter how sophisticated the question-asking. To avoid misunderstanding, let me emphasize that this judgment does not reflect a lack of faith in either empirical work in general or industry studies in particular. The future progress of economics seems to me largely to depend on empirical work. And I have no doubt that an alert student who spent several years in exploring in detail a particular industry or even a few firms would emerge much enriched in knowledge of economic processes and with numerous suggestive hypotheses about economic behavior. I should like further to add that complete confidence in such judgments is impossible in matters of this kind; the proof of such puddings is in the eating.

My doubts arise because of the kind of questions Hart asks and the process for getting answers he suggests. I can perhaps indicate their source most easily by a simple example. Suppose an investigator were to seek to determine how an entrepreneur's purchase of sulphuric acid would be affected by a quintupling of its price. If the entrepreneur has experienced such a change, the answer is best determined from the record of his actual actions. But suppose he has not and the investigator seeks an answer by asking the entrepreneur how much he would reduce his purchases. Can the entrepreneur give a meaningful answer? I think not. He has had no occasion to face the problem; it would have been wasteful of him to have devoted much of his time or the resources of his firm to getting an answer. His initial reaction is likely to be that he could not reduce his consumption by much. Yet in fact, let him be faced by a quintupling in the cost of sulphuric acid and it will pay him to seek ways of economizing its use and of finding substitutes; it will pay him to have his engineers devote their efforts to that problem instead of others or to hire new engineers; and if this one entrepreneur does not do so, he is likely to find himself forced to by competitors who are quicker to react. Indeed, if the entrepreneur and his questioner are both sufficiently sophisticated, the answer may well be along these lines rather than in units of sulphuric acid.

It seems to me that as yet we do not know what phenomena Hart wishes to see explained, and that it is therefore premature to seek explanations. When we are in a position to seek explanations, we should do so in the objective data determining the phenomena and describing past reactions to similar phenomena, not in what selected people think. I doubt that any reasonably simple answers to many of Hart's questions exist; or that if the answers exist, businessmen know them; or that if they do know the answers, they will give them in response to questioning. In work of this kind, it is important to remember that *homo sapiens* is distinguished from other animals more by his ability to rationalize than by his ability to reason.

RICHARD M. GOODWIN: Liquidity is at once an important and an elusive concept. My own experience has always been that it is difficult to keep a firm hold on reality in any attempt to generalize it. The simple beginnings of the idea are clear enough. It is one of the oldest economic doctrines that money is barren. Nonetheless, long ago it was recognized that a fall in some particular price and especially a fall in all money prices makes it advantageous to hold money in spite of this barrenness. One way to look at the Keynesian addition to accepted ideas is to say that he merely emphasized the consequences of a fall in securities prices as separate from and distinct from that of a decline in the price level. Money makes prices go up, but it may be only the prices of securities. If we separate these prices from the general price level, we have then severed all direct connection between money and prices. A very tenuous connection can only be re-established through the capital market.

Thus far the meaning and import of liquidity preference is fairly clear, and, because of the experience of the thirties and the war, it is convincing. By virtue of its great generality, Professor Marschak's definition is sufficiently abstruse to make it difficult to see the practical meaning and implication. In his concise deduction of the consequences of the definition, I have complete confidence. Therefore it seems to me most fruitful to explore the meaning and desirability of the first step.

It appears that expected price change does not play any necessary role in his concept. Rather it is a question of cost of resale as represented by the difference between purchase and selling price (due account being taken of dealers' fees and other similar expenses). There is no question but that this fact is important in nonstandardized articles and even in standardized ones, as is shown by the short-money market. This is held to be vital in the explanation of the lower limit to short-term rates in times of excessive funds, although the American experience would not give it any large magnitude. The only question is whether this is the correct interpretation of Professor Marschak's definition, and, if it is, whether it is good strategy to adopt it. It seems to me to be entirely different from the Keynesian definition, which depends on expected price changes.

About definitions, of course, there can be no disagreement; there is only the matter of judgment about how best to get at those things which it is

felt are important. This brings up a question which I have always found puzzling: wherein exactly does the quality of liquidity lie? More particularly, is uncertainty and/or ignorance involved? Even if all future events are known to a trader, some goods will enjoy a liquidity premium if their prices will rise relatively to others. Hence uncertainty and ignorance do not seem essential. On the other hand if the future is perfectly known to everyone, present prices would fully take account of the facts and possibly in such a way that liquidity considerations could play no part. This suggests a further question: Should we say that there is a collective uncertainty if each trader feels he knows the future but that severally their anticipations are inconsistent? Some such situation is perhaps necessary for liquidity to play a role with certain anticipations.

The assumption of complete information is obviously very helpful, even indispensable, to the construction of dynamical theories, but it leaves me uncomfortable. In practice a large part of liquidity preference is based on real ignorance of the future. Specifically, the desire to hold idle cash seems actually to be intimately related to doubt about the future. It is not clear how this tallies with the fact that uncertainty is inessential. Possibly it is best explained in terms of the fact that money, being universally acceptable, is that asset least likely to change value, since its probable value is a composite of thousands of other probable values. This would, of course, apply only to periods of a more or less stable price level.

Naturally I agree with Professor Hart in his insistence on the necessity of facing the problem of real ignorance about the future. The question is, can we say anything more than that it is very difficult to say anything? The adoption of the language of probability enables us apparently to get some results even assuming uncertainty. But does it really? The theory of probability is a way of joining together in one statement ignorance about single events and knowledge about groups of events. But is it not commoner in economics to have ignorance about both? Not only do we not know what the price of wheat will be two years from today but we do not know what it will be any other day of that year, or indeed its mean value for the year. There is no doubt that decisions must be and are taken irremediably in the darkness of ignorance, but it does not follow that they are taken in the form of a probability density calculation. Or, if we wish to describe the basis of such decisions in terms of probabilities, we should carefully avoid the error of thinking that this tells us anything about the formation of decisions in the presence of ignorance. It is my impression that classical probability theory tells us nothing about how these distributions are formed.

Professor Hart is surely right in saying that a great deal of work must be done on the basis of business decisions for the future. It seems that little progress has been made since the problem was first stated in straightforward dynamical terms. I have sometimes tried on this question the dubious technique of introspection. On the whole, when in doubt I do nothing. The *status quo* is not rational but it is at least definite. It seems obvious to me that such elemental conservatism is common but how common?

Even if this be granted, there remains the second problem of what happens in a changing world if people are so inert in their behavior. For we do know that decisions are changed from time to time in the face of new conditions. Possibly the decisions are adjusted only in response to inescapable current facts but without taking a definite position about the future. Such a conclusion is comforting to econometricians and model builders because it means that plans can be made to depend in simple ways on contemporaneous, visible events. Its convenience is no substitute for veracity and this certainly needs further investigation.

The importance of the imperfections in the capital market have been sharply pointed out for us by Professor Hart. I hope that he has overstated the case, because the introduction of such complex institutional patterns necessitates the abandonment of the simplicity of existing theories—and a theory is only as good as it is simple. Possibly one could rescue accepted doctrine by asserting that credit rationing achieves much the same result as interest rates are supposed to; i.e., getting credit to the most productive borrowers. In support, one may say that price mechanisms are supposed to be merely a superior form of rationing. Then the only error would be in relating a purely fictitious interest rate with any actual observed one.

The MacMillan Committee in England gathered much evidence on this whole subject. Although its evidence was complicated enough to allow anyone free to hold almost any opinion, it did manage to cast serious doubt on the reality of the "unsatisfied fringe" of borrowers, and hence on the efficacy of interest rate policy by itself to adjust the demand for savings to the supply at full employment levels of income. The material presented there was important in influencing Keynes to deny the traditional theory of interest.

Professor Hart alludes to a recent tendency to substitute "equals or exceeds" relations for equalities. Actually I should think that one of the best examples of this was Keynes's modification of Fisher's interest theory. He insisted on the distinction between the rate of interest and the rate of return over cost (or better, the marginal efficiency of capital), partly in order to be able to say that the one might be less than the other. It was for this reason that a reduction in the rate of interest need not have any considerable stimulative effect on investment.

FRANCO MODIGLIANI: Ever since I began studying the papers presented by Professors Hart and Marschak I have been confronted by a very difficult problem, as I could not make up my mind whether to discuss Hart's paper and forego the pleasure of discussing Marschak's paper or vice versa. Hart's paper deals precisely with the task to which I will devote myself in the near future: briefly, the task of answering that impressive list of incredibly difficult questions that Hart has been raising. On the other hand, I am so greatly impressed by some of the points raised in Marschak's paper—points which are again somewhat connected with the prospected investigation—that I could not resist the temptation of discussing these points a little further. I eventually got out of the dilemma by following the procedure suggested in Marschak's paper: I will "minimax my regret" by making first some com-

ments on Hart's paper and then make some remarks on the Marschak-Savage approach to the problem of commitment making under conditions of ignorance.

Hart's hypothesis concerning the set of tests an investment decision is to pass appears to me as a very useful conceptual framework within which to organize the University of Illinois project on factors governing investment decisions. These factors may be conveniently classified into two groups which correspond closely to Hart's first and second test.

A. Expectations of future conditions upon which the yield of the investment will depend and the degree of uncertainty attached to these expectations: these are essentially the factors that determine the outcome of Hart's second test. These expectations may be formally thought of as referring to the future position of the demand function for the product, of the supply functions of the relevant factors of production, and to the extent of physical wear and tear and obsolescence of the item of plant or equipment under consideration.

B. Financial position, current and prospective: these financial factors are basically those that determine the outcome of Hart's first test. They include the current and prospective liquidity of the firm arising from current operations and the conditions under which additional capital may be secured.

With respect to both groups of factors a microeconomic investigation based on an analysis of time series of individual firms and supported by a survey of management through personal interviews and/or self-administered questionnaires should provide information of two types. First, it should help us to understand how the managers of the firms handle those problems for the solution of which the economic theory of rational behavior is, unavoidably, of little or no use as they are beyond the scope of this theory. We can work out the theory of rational behavior under subjective certainty (or at any rate I think we can and we have gone a good deal of the way in this direction). Similarly we have been and are still working on the theory of rational behavior under uncertainty, for a given state of expectations and given tastes toward risk taking. Marschak and Hart have been outstanding contributors in this field and their papers indicate that we are making good progress in this direction. But there obviously cannot be any rational theory of attitude toward risk taking; and there hardly is a rational theory of deriving expectations from current data. Indeed the economists own experience has not been too encouraging in this respect. On these types of problems the prospective investigation might help to supply the needed factual background and enable us to test the possible relevance of the psychological factors in the business cycle.

Secondly, even in those cases where the theory of rational behavior exists, or can be elaborated, we frequently suspect that actual behavior follows a different pattern, and that this pattern is not necessarily an erratic one. This pattern may be simply irrational (e.g., due to custom or prejudice) or it may be rational, or close to it, though in a sense not fitting our postulates of rationality. For instance, the cost of making the best decision, both psychological and material, is hardly taken into account in our theorizing, though it may

in fact be a very important factor in explaining rules of thumb and non-optimal decisions. In this field then the inquiry should help to check our theoretical schemes against reality, indicate systematic biases and help perhaps to construct more useful schemes of analysis. Finally, it may suggest profitable lines for further development of the theory of rational behavior, under the institutional setup that effectively confronts the decision makers. I feel, for instance, that the pioneering work of Hart in developing the theory of rational behavior under capital rationing is in need of further systematic development.

It goes without saying that the inquiry we are undertaking, as well as a number of similar investigations which are being carried out from many sides, may well fail to produce any definite results, or perhaps even any valuable insight. Yet I feel that the a priori skepticism that is well represented by Professor Friedman's remarks, while it is very useful in tempering excessive optimism of which Professor Hart is perhaps guilty, should not deter us from trying. The considerable number of research projects which are already proceeding or are getting under way in this and closely related fields indicates that we are not the only ones who feel that this method of approach is worth trying. I very much hope that it will be possible, in some form or other, to attain an effective co-ordination of these various endeavors for we shall have a great number of problems in common—primarily methodological and sampling problems. By co-ordinating our intellectual and material resources we should be able to make our work far more productive and we might really succeed in disappointing the pessimistic expectations of Professor Friedman. And I know that Professor Friedman himself would ask for nothing better.

I now turn to some brief comments on Professor Marschak's approach to the problem of commitment making under ignorance; i.e., when the operator's expectations are not single-valued and when, furthermore, the probability distribution of the possible future events is subjectively unknown or not completely known. This is a type of problem in attacking which the theory of rational behavior has been so far practically powerless. It seems to me that the Marschak-Savage principle of "minimaxing regret" and more generally the basic approach underlying this principle opens up very promising vistas.

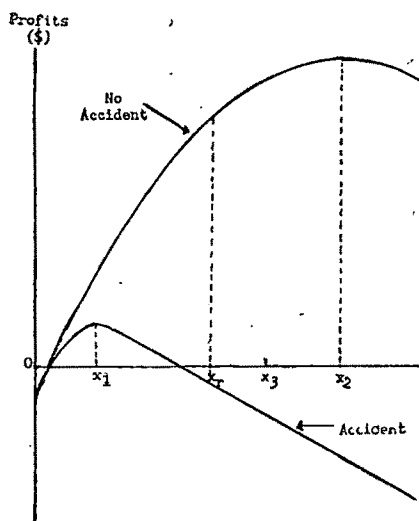
Professor Marschak has been concerned primarily with the application of his principle to the problem of varying degrees of liquidity of assets and has stressed its normative aspect. I would like to discuss a little further the application of this approach to the general problem of commitment making under ignorance and especially to explore to what extent this approach may be used in understanding and forecasting economic behavior quite aside from its value in determining the best rule of action for the rational man.

It will be useful for this purpose if we briefly examine the application of the approach to another example which is free from the "discontinuity" complications which play a dominant role in Marschak's discussion. I believe the example which I am going to suggest presents the case in its simplest and most clear-cut form.

I shall consider the case of a dealer having exclusive rights to sell ham-

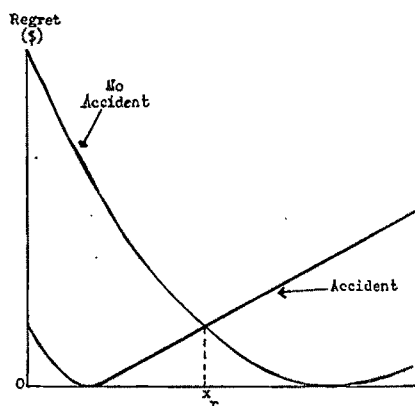
burgers at an air show which is to take place at a certain future date. The main attraction of this show is the expected arrival of a man flying a very dangerous machine across the Atlantic. It is entirely possible that the man will fail to arrive and, if this will be known before people leave for the show, the turnout instead of being equal to the number of available accommodations will be only a certain fraction thereof. Suppose, furthermore, for the sake of simplicity, that, from past experience, our dealer knows with certainty the market demand curve that will confront him in case of "accident"—i.e., if the man will not arrive—and in case of "no accident." Obviously the market demand curve will be much higher, within the relevant range, in the latter case than in the former case. Also, because of the nature of the event, it

FIGURE 1
OUTCOME CURVES



Size of Commitment: X

FIGURE 2
REGRET CURVES



Size of Commitment: X

would not make any sense to speak of the numerical probability that either demand curve will in fact materialize: we are therefore dealing with a case of ignorance in Marschak's sense. What is, under these conditions, the size of the commitment the man will make; i.e., the best number of hamburgers and rolls that he should have ready for sale at the show?

The problem may best be approached by analyzing the "outcome curves" shown in Figure 1. These curves indicate the outcome, in terms of net profits, measured on the vertical axis, of various commitments, measured on the horizontal axis (in our case the number of hamburgers brought to market), under each of the two possible events. If we assume, for convenience of graphical analysis, that each of the two possible demand curves is linear and that the variable costs are proportional to the number of hamburgers so that the total cost is also linear, then it is easy to verify that the "outcome curves"

will be parabolas of the type shown in Figure 1. More precisely, this is strictly true for the upper curve which shows the outcome for various commitments in case of "no accident." As for the lower curve, which shows the outcome in case of "accident," the parabola turns into a straight line for sufficiently large values of x : indeed, no matter how many hamburgers the dealer may have ready for sale, it is to his best interest not to push the price below the level that maximizes his gross revenue. Any amount that cannot be sold at this price it will be profitable to destroy; or he may be able to resell it to other dealers, though below his purchase price. In the former case (assumed in our graph) the slope of the straight line will be equal to the negative of the marginal cost. In the latter case the slope will be less than this by an amount equal to the net resale price; the straight line would then fall less rapidly than in our graph and would also start somewhat further to the left.

Before considering the Marschak-Savage solution I propose to examine two alternative rules of choice which are particularly interesting because they appear to represent limiting cases.

1. Minimizing the loss or, as I would prefer to put it, maximizing profits. This rule implies considering the worst possible outcome that may correspond to each commitment and choosing that commitment which corresponds to the best of these worst possible outcomes. Since in our example the worst possible outcome for any commitment is that given by the lower curve (i.e., that corresponding to the case of accident), the maximin solution is easily seen to be x_1 , the commitment corresponding to the peak of the lower curve. This maximin solution may be considered as the rule of action characteristic of the "cautious pessimist." It implies the "pessimistic" frame of mind which assumes that nature will tend to produce the situation most adverse to the operator's choice and the "cautious" unwillingness to take any chance about it.

2. Maximizing profits. This rule implies considering the most favorable possible outcome for every commitment and choosing that commitment which corresponds to be best of these most favorable outcomes. Since in our example the best possible outcome for every commitment is that given by the upper curve (i.e., that corresponding to the case of "no accident"), the maximax solution is seen to be x_2 , the commitment corresponding to the peak of the upper curve. This choice may be considered as characteristic of the "reckless optimist." It implies the "optimistic" frame of mind which assumes that nature will tend to produce the situation most favorable to the operator's choice and the "reckless" disregard of the desirability of hedging against the possibility of a "worst" occurrence.

These two rules thus appear to represent limiting cases in a psychological sense. Furthermore, in cases such as that illustrated in our example, they represent limiting cases also from a quantitative economic point of view. Indeed it is easy to see that any commitment less than the maximin x_1 would be "absolutely irrational," irrespective of psychological disposition; for, by increasing the commitment toward x_1 , the prospective outcome will be improved no matter which of the two events will materialize. Similarly any commitment larger than x_2 would be "absolutely irrational" as, by decreasing it, the prospective outcome will improve in any event. Clearly any rule of

action leading to such irrational commitments would, itself, be an irrational rule. Commitments within the range marked off by x_1 and x_2 on the other hand will be "rationally admissible" in the sense that increasing or decreasing the commitment would improve the outcome under certain admissible events but reduce it under other events which are also considered possible of occurrence.

Thus it is seen that, at least under certain conditions, the traditional theory of rational behavior is sufficient to yield a range outside of which no rational solution can possibly fall. Note in particular that the no-action or zero commitment would belong in our example to the set of irrational solutions.

We may now proceed to consider the Savage-Marschak minimax regret solution with the help of Figure 2. Let us first recall that the "regret" for any commitment and a given event measures the extent to which the actual outcome of the commitment falls short of the best possible outcome open to the decision maker under the given event. Thus in Figure 2 the curve with its trough on the left is the regret, for any commitment, in case of "accident." It measures, assuming that the accident has occurred, the difference between the highest possible profit obtainable under these conditions (the peak of the lower curve) and the actual outcome of the commitment (the ordinate of the lower curve corresponding to this commitment). Thus the regret curve in case of accident is simply the lower of the two curves of Figure 1 turned upside down and with its peak resting on the x axis. The regret function corresponding to the case of no accident is shown by the curve with its trough on the right and is obtained from the upper curve of Figure 1 with the same procedure. The minimax regret rule of choice now implies considering the greatest possible regret that may correspond to each commitment and choosing that commitment which corresponds to the smallest of these greatest possible regrets. In our figure this solution is seen to be x_r , the abscissa of the point of intersection of the two regret curves. In fact the maximum possible regret for each commitment is given by the "no accident" curve up to the point of intersection (if no accident materializes the greatest regret will occur if we have brought a small supply) and by the accident curve, thereafter. The point of intersection is then precisely the smallest of the maximum possible regrets. (Note that if our man were in a position to resell to other dealers any amount left over, the straight line on the "accident" curve would be lower in the relevant range, and the solution would be a larger commitment than in our figure. This checks fully with Marschak's results to the effect that the size of the commitment is an increasing function of the "liquidity" of the investment.)

It is seen that, in our example, the minimax regret solution falls well toward the center of the range marked off by the two limiting choices discussed above. And close consideration will show that, indeed, this rule of action represents a very reasonable middle ground also in a psychological sense. It implies taking the risk of faring somewhat worse than under the maximin solution, if the most unfavorable conditions should materialize, as long as by doing so we can sufficiently improve our prospect for the case in which a more

favorable event should occur. Similarly it implies willingness to take less than the maximax under the best conditions if by doing so we can sufficiently improve the outcome should the worst conditions materialize. Thus, in a sense, this principle introduces in the process of choice under ignorance the fundamental economic principle of opportunity cost, of balancing what is lost under the most favorable event against what is gained in the least favorable event. It has in addition a number of interesting analytical properties. It belongs in any case to the class of rationally admissible rules of action in the sense defined above. Again, if the relevant probability distributions are fully known, then the rule of minimaxing the expected value of regret coincides with the rule of maximizing the expected value of profits. (It is well to recall at this point that in spite of apparent similarities the minimax regret solution is not the same as the solution obtained by assuming that all admissible events are equally likely, as was already pointed out by Marschak. For instance, in our example this solution would yield the commitment x_3 of Figure 1, which is considerably larger than the minimax regret solution. All that we are assuming is that the events are possible and not that they are equally likely.)

These brief remarks should be sufficient to support my tentative suggestion that the minimax regret solution might be of considerable help in explaining and forecasting economic decisions. Certainly it is not the only rationally admissible rule of action. Indeed it appears that following the Savage-Marschak line of approach it is possible to formulate a whole class of such rules. The point is rather that the minimax regret principle is generally a very reasonable one and introspection suggests that there is a tendency, in decision making, to follow more or less consciously a procedure similar to this. Furthermore, it seems a reasonable hypothesis to suppose that people at a given point of time (and perhaps even the same person at different points of time) will be distributed, according to their psychological dispositions, between the two extremes mentioned above, with a greater concentration corresponding to intermediate position. If this were so, it would seem that actual commitments, especially if they are the result of many different individual decisions, might tend to come close in some average sense to the minimax regret solution. Or, to put it the other way around, that the minimax regret solution might tend to give us on the average a reasonably good forecast or explanation of the actual size of commitments.

It goes without saying that these suggestions are very tentative. After all the Savage-Marschak approach is hardly more than a newborn baby and its true character is not yet fully known. Further investigation is needed—analytical and, if possible, empirical. For one thing, the previous arguments rest heavily on the assumption that the maximin and maximax solution represent the extremes of the range of rationally admissible decisions and that the minimax regret solution falls in between. This property which holds in our example is known not to hold all the time; it is therefore necessary to investigate more closely the conditions under which it holds and whether these conditions are, as it is presently conjectured, empirically important.

Furthermore, regret should be more generally measured, not in terms of dollars, but in terms of the utility of various profit levels.

Yet the results already established seem to me sufficient to indicate that further investigation along these lines is very much worth while and I am confident that such investigations will prove the usefulness of the approach, not only on normative grounds, but also as a clue to understanding and even forecasting actions of economic agents under conditions of ignorance.

JAMES TOBIN: A convenient general model for the theoretical analysis of rational business decisions under uncertain but, to use Professor Marschak's term, complete information involves three functions: the utility function, the profit function, and the probability density function. The utility function is an extension to the business firm of the Friedman-Savage concept of measurable utility of certain income. The profit function relates the firm's income to variables under its control and to parameters outside its control, some or all of which are not known with certainty. The probability density function describes the joint distribution of the firm's estimates of the probabilities that the uncertain parameters will assume various values. Combining the first two functions eliminates profits as an explicit variable and expresses utility in terms of the variables and parameters determining profits. Weighting the combined function by the probability distribution of the uncertain parameters expresses the expected value of utility as a function of the variables under the firm's control. It is assumed that the firm adjusts these variables so as to maximize expected utility. The conditions for the maximum relate the controlled variables to the certain parameters and to the probability distribution of the uncertain parameters.

The chief advantage of this formulation of the problem is that it facilitates the transition from the theory of the firm under certainty to the analysis of business decisions under uncertain conditions. The only new element required in the theory of the firm under certainty is information concerning the utility attached to various levels of guaranteed profits. Inclusion of this item in Professor Hart's catalogue of recommendations for empirical research would be useful both for its own sake and for the analysis of the effects of uncertainty. The firm's utility function may differ from a simple linear function of profits, implying constant marginal utility, insofar as it reflects a fear of going out of business, an idea of normal profits, a tradition of sharing an oligopolistic market, or a fear of unfavorable public reaction to high profits.

A second advantage of this formulation is to make clear that no generalization can be made concerning the features of the probability distribution relevant to the firm's decisions. The relevant features depend on the forms of the utility and profit functions. For example, if the combined utility-profit function is a polynomial of degree n , the marginal utility has degree $n-1$ and consequently the moments of order no higher than $n-1$ will be relevant. Likewise no generalization can be made concerning the existence of certainty-equivalents, an issue raised by Professor Hart's paper. There are some cases in which certainty-equivalents will exist. For example, if the combined function

is a polynomial of degree 2, the expected values of the uncertain parameters are certainty-equivalents. In more complex cases they may exist but not be useful; it may be more convenient to relate the firm's decisions to the moments or other statistics of the distribution instead.

Professor Marschak's treatment of liquidity under complete information approximates the utility of profits simply by the size of profits. His profit function is, aside from the discontinuity introduced by liquidity, a second degree polynomial. If the profit function were continuous, only the mean of the probability distribution would affect the firm's decisions. One of the contributions of his paper is to show that, when there is a discontinuity in the profit function involving a certain parameter, other features of the distribution also are relevant. The particular discontinuity considered by Professor Marschak arises from the difference between the firm's buying and selling prices of factors of production. But the technique of analysis could be employed to examine the effects of other discontinuities, among them the difference between the firm's borrowing and lending interest rates and the other imperfections in the money market described by Professor Hart.

I would like now to make some specific comments on Professor Marschak's interesting paper.

The first comment concerns the economic situation to which the mathematical model is relevant. Here it is important to distinguish between inputs and prices of services, on the one hand, and quantities and prices of assets, on the other. The analysis is intended to apply both to contracts for services and to assets. However, the mathematical model applies strictly only to contracts for services; it analyzes, for example, the number of machines a firm will rent for a year under a contract which stipulates that the firm must rent at least as many the following year or suffer a penalty. It is not made clear how the model applies to the purchase of machines which can later be sold on the secondhand market only at a loss. The conclusions with regard to the effects of liquidity and uncertainty would no doubt stand in either case, but to apply to the demand for assets they would have to be supported by a somewhat different mathematical development. Specifically, the fundamental profit function in 4.1 would be different. If P is interpreted as the original price of an asset and IP as its secondhand price, as in Professor Marschak's examples of liquidity 2.1.1, then second year profits, z_1 , would not include the term $(-x_0)$. Input equal to that of the first year, x_0 , having already been paid for, would not be a cost again. An additional correction would be necessary if the assets on hand at the end of the second year ($x_0 + y$) were assumed to have any value at that time.

The second comment refers to the shift in the production function considered in Professor Marschak's paper. Some confusion is created by the fact that the shift described in the text (4.2.2) is not the same as the shift used in the example, Chart II. The shift defined in the text is $\rho_0 = \rho_1 (x + u)$. This means that $\rho_0(0)$ and $\rho_1(0)$ cannot both be zero if $\rho_1(u) \neq 0$. However, the computation of profits in the example of Chart II clearly assumes that in both time periods there is zero revenue from zero input. The shift in the

function used in Chart II is thus $\rho_0(x) = \rho_1(x + u) - \rho_1(u)$. If this expression for the shift were used in the text, confusion would be avoided without affecting the subsequent argument.

Third, the paper does not make sufficiently explicit the fact that the conclusions (5.11) concerning the effect of the variance of U on initial input x require an assumption which is not needed for the preceding propositions on the effects of liquidity. The additional assumption is that whatever the variance (σ^2) of the distribution of U , the distribution of U/σ is always the same.

Finally, I have some questions about Professor Marschak's ingenious analysis of the case of ignorance. The rationale of "minimaxing the regret" is not shown; it is not clear that this policy has any relationship to the maximization of profits, or of the utility of profits, over time. If "minimax regret" is not a deduction from postulates of rational behavior, it might be considered a hypothesis concerning actual behavior. But in this case I do not see why "minimax regret" is always a better hypothesis than, say, what I might define as "maximin complacency." Some individuals have a propensity for kicking themselves over missed opportunities; knowing this in advance, they may act so as to try to avoid such future self-inflicted pain. But others are prone to congratulate themselves on how much better they have done than if they had acted differently; such characters may act so as to provide the occasion for future self-congratulation. It is particularly difficult to understand the logic of "minimax regret" in Professor Marschak's second example (6.1.2). Here the ignorance concerns a parameter—the variance of the unknown probability distribution—which will still be unknown when the outcome of the firm's decision becomes apparent. Consequently the firm has no way of knowing, even then, whether or not to regret its decision. If the firm will not know whether it missed the boat or not, why should it plan to minimax the miss? When time provides enough information to estimate the unknown variance, then the case is no longer one of ignorance. Lastly, the case of ignorance seems to me highly artificial; it is difficult to imagine that a firm would know the set of values which a parameter might assume without attaching some probabilities to the members of the set.

INPUT-OUTPUT ANALYSIS AND ITS USE IN PEACE AND WAR ECONOMIES

RECENT DEVELOPMENTS IN THE STUDY OF INTERINDUSTRIAL RELATIONSHIPS

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I

The only excuse that I can give for speaking on the subject of the recent developments of input-output techniques is that this title is not of my own making. I realize perfectly well that before embarking upon the elaboration of any of its finer points I must give you an account of the general outlines of the method and describe its conceptual background. These outlines are very simple—all too simple indeed in the eyes of some of the more skeptical critics.

We are dealing here essentially with attempted application of the economic theory of general equilibrium to empirical quantitative analysis of the concrete national economy. The economy is visualized as a combination of a large number of interdependent activities; that is, of various branches of production, distribution, transportation, consumption, etc. Each one of these activities involves absorption of commodities and services originating in some other branches of the economy, on the one hand, and production of commodities and services which in their turn are transferred to and absorbed in its other sectors, on the other. The commodity and service flows (transfers) taking place between the separate branches of the economy within some specified period of time, say a year, can be conveniently described by a rectangular input-output table. The main body of the table contains as many rows and columns as there are separate sections of the economy, and every row and the corresponding column are labeled accordingly. The allocation of the total output of any one industry among all the others is shown by the series of figures entered along its particular output row. The distribution of all the inputs absorbed by any one industry by origin is at the same time represented by the sequence of figures entered in the appropriate input column. Since everybody's output constitutes somebody's input, the figure entered, say, in the intersection of the "Lumber and Timber" row and the "Cotton Yarn and Cloth" column, shows the amount of lumber and timber products absorbed by the cotton yarn and cloth industry. ("Double entry" bookkeeping!) The figures along any particular distribution row added

together will naturally give the total output of the corresponding industry.

All entries in the input-output table must in this context be considered as representing physical quantities measured in terms of strictly physical units, a different one for each type of commodity and service. That is why one can add them row by row to get the corresponding total outputs of the separate industries while it makes no sense to combine them column by column, since such an operation would involve adding yards of cotton goods with, say, tons of steel and man-hours of labor. Actually the contrast between the two cases of addition is somewhat less sharp than it appears to be from the foregoing argument. Depending upon the degree of differentiation achieved by the underlying industrial classification, even the entries along any one row are not entirely homogeneous and have to be treated as indices of physical quantities rather than purely physical quantities themselves.

Having given an empirical description of the system of interindustrial relationships, we can turn now to the theoretical problem of its explanation. To explain means in this case, as in any other, to reduce to a set of, in some sense, more fundamental relationships. Following the traditional outlines of the general equilibrium theory, these fundamental relationships can be conveniently subdivided into two sets. The first describes the balance—the external relationships—between all the various sectors of the national economy in terms of the outputs (supply) of and the inputs (demand) for each and every kind of goods and services. These supply-and-demand equations are simple in form and noncontroversial in content.

The second set of relationships reflects what one might call the internal structure of each individual sector of the economy. By structure I mean the interdependence between the quantities of the inputs absorbed and the amounts of the product or products turned out in a given process. The relationships of that second type are anything but simple.

The partial equilibrium theories explaining the behavior of a firm on the one hand and the consumer's behavior on the other are essentially engaged in elucidation of this type of structural relationships. So are also the numerous empirical studies of industrial cost and supply curves as well as various statistical investigations of consumer demand and savings schedules. One almost suspects that whoever coined the definition of a specialist as one who finds out more and more about less and less had in mind the development of these particular fields of empirical economic analysis during the last two decades.

The input-output analysis represents an attempt to straighten out our line of advance by bringing up the other wing—the study of inter-

industrial relationships. The typical partial equilibrium analysis concerned with the study of the operation of one particular sector of the economy, say a single industry or even an individual enterprise, leans heavily on the simplifying *ceteris paribus* assumption, according to which the external setting of that particular unit in its relationships to the rest of the economy are considered as given. The input-output analysis being, on the contrary, a study of the mutual interdependence of the different sections of the economy focuses its attention precisely on these external relationships. Insofar as—and this mainly for lack of sufficient empirical information—some simplifying assumptions have to be made, they should better be made in regard to the internal cost-output structure of the individual industries. In particular the controversial assumption of constant input ratios (fixed “production coefficients”) enables us to engage in a factual study of interindustrial relationships and to apply to it the powerful tools of the general equilibrium theory without waiting for a complete and definitive solution of all the theoretical and factual aspects of the partial equilibrium analysis.

The technical coefficients of all the separate inputs in all the individual industries can be derived directly from the information entered in the input-output table. By dividing all the entries in each input row by the total output of the industry the cost structure of which that particular row represents, we find how much of every particular kind of inputs had been absorbed per unit of the finished output.

This method of deriving the input ratios from total input and output figures is of course not the only one which can be used to determine the quantities of each cost element absorbed in a given industry per unit of its total product. An alternative and more direct way of determining, for example, the amount of coke required to produce a ton of pig iron or the amount of corn feed required per hundredweight of live hogs is that of asking the ironmaster in the first and a specialist in animal husbandry in the second case. As a matter of fact one can easily visualize the possibility of assembling a complete set of input coefficients describing the structural characteristics of all branches of the national economy entirely on the basis of such direct information without recourse to any actual statistical input or output figures. Such a complete table of technical coefficients combined with the corresponding set of theoretical balance equations would in principle enable us to reconstruct all the actual input-output figures without recourse to any additional factual information. This statement, however, must be supplemented by the following qualifying observation. So long as the structural characteristics of the system are described in terms of various input-output ratios, the actual input and output quantities can

be reconstructed also only in relative terms; we could obtain, so to say, only a scale model of the real system without being able to say anything about the absolute magnitudes involved.

Such considerations, however, become important only if one makes an attempt to reconstruct the economic system in its entirety. For many purposes, such, for example, as the evaluation of the quantitative implications of alternative policies in respect to allocation of primary resources or, say, various patterns of public works or governmental purchases, it is necessary to treat the national economy as an open rather than as a closed system. A closed system becomes open as soon as one disregards (that is, considers as being pliable at will or even entirely unknown) one or more of the basic structural relationships of which it has been made. Thus reduced, the number of available equations becomes insufficient to determine uniquely the magnitude of all the unknown variables. That means that an analytical economist is free to prescribe arbitrary magnitudes to some of these variables and then determine the corresponding magnitudes of all the other variables on the basis of the still available equations. Translated in the pragmatic language of active policy making, this says that in an open system it is possible to "fix" a certain number of variables by deliberate choice while the remaining will fall in line in accordance with the existing necessities of the still inviolate structural relationships. The general logic of this procedure is essentially identical with that followed in somewhat less articulate form in different models of Keynesian multiplier analysis.

All the practical applications of the input-output technique as developed in the course of the last five years followed precisely this open pattern. One omits from the theoretically complete set of structural coefficients some of those which connect, for example, the consumers' and governmental purchases with the other parts of the system. Then one fixes the actual magnitude of these particular kinds of inputs by prescribing a specific "bill of goods" constituting what in this context might be called the final demand; and then one determines through theoretical computations—which amount to the solution of a large system of simultaneous linear equations—the structurally necessary magnitudes of all the remaining inputs and outputs.

Cutting a piece out of a closed band results in appearance of two loose ends. So does the cutting of a closed general equilibrium system. The "final bill of goods" is the loose end which adjoins the cut out stretch on the demand side. The labor inputs and the inputs of all the other services produced by the household, government, and other sectors of the economy which were eliminated mark the other end or rather the beginning of the now open economy. They must be treated now as original, primary inputs. In a closed system, for example, the

level of the labor supply would have been directly connected with the level of real income; that is, the quantities of consumers' goods absorbed by the households. Now such direct connection between the two is disregarded. But the numerical computation described above will give us the total amounts of labor and other primary inputs directly and indirectly required to produce commodities and services included in the final bill of goods.

The actual volume of numerical operations involved in such a computation is very large compared with that to which we were hitherto accustomed in economic and statistical studies, or even in the natural sciences. It can be said, however, that with the spectacular advance in the field of large-scale computers, the numerical solution of such sets of equations represents the least bothersome of the practical and theoretical problems involved in the empirical application of the general equilibrium theory.

An analogous approach can be used also in the study of the price system. Consider an economy in which the profit earned in each industry per unit of its output and all wage rates were arbitrarily fixed. It is clear that only one particular set of prices could simultaneously balance the revenue and outlay accounts of all individual industries. The actual numerical magnitude of each price will depend upon the structural characteristics; that is, the technical coefficients, of all the industries. In the same way as it is possible to compute the direct and indirect effects of a given change in the final demand for one particular commodity upon the total outputs of all the sectors of the economy, one can also determine the effect which an increase or decrease in any given profit or wage rate would have on the prices of all the goods and services. In short, the input-output structure of an open system defines a unique relationship between (a) the set of all prices, (b) the set of all wage-rates, and (c) the set of all unit profit rates. Given any two of these, the third can be computed indirectly.

II

It would be hardly an exaggeration to say that up to now the practical difficulties of efficient utilization and interpretation of large amounts of detailed quantitative information constituted one of the principal obstacles in the path of the development of empirical general equilibrium analysis. The only possible way of overcoming the resulting impasse seemed to point toward the detour via aggregative analysis—a very unsatisfactory detour indeed. Many of those who followed it have bogged down in the morass of index numbers difficulties. Others ended up in the trackless field of oversimplified economic models, while those who succeeded in the end in regaining the original thorough-

fare found that the double transfer from particulars to aggregates and then back from the aggregates to the particulars all but destroyed the empirical significance of their final factual conclusions. The input-output technique, on the other hand, enables us to study the national economy as a whole directly in terms of its separate components; that is, taking account of the peculiar characteristics of its individual sectors.

Having thus sharpened the issue, I must now take off its brittle edge. As already mentioned before, the practical choice is not between aggregation and non-aggregation but rather between a higher and lower degree of aggregation. The immediate factual observations are always particular, not general, although in putting them down on paper we often are already consciously, and more often unconsciously, introducing a certain amount of implicit aggregation. The final results of the analysis, insofar as it is at all operational, that is comparable with the observable course of events, must again be expressed in or at least translatable into particular statements about particular industries, households, etc. Aggregation represents essentially an intermediate step. As such it must be judged on the basis of purely operational criteria. As the following observations will show, the question of aggregation represents essentially a special aspect of the more general problem of the classification of industries and of relevant distinction between different sectors of the national economy in general.

For argument's sake, let us visualize a very simple (!) economic system consisting of households and of one hundred closely delineated and thus sharply distinguishable industries. Let us furthermore assume that the internal structure of each one of these one hundred individual industries can be accurately described in terms of a set of (at most) one hundred constant technical input coefficients and finally that the numerical magnitudes of all these coefficients are actually known and available in the form of a 100×100 table. Having this information, let us proceed now to determine the effect of an increased *final* demand for the products of, say, the automobile industry upon the *total* output of the paper industry. Following the previously described procedure, we form a system of one hundred linear equations and solve it for the total output of the paper industry in terms of the final demand for automobiles. It hardly needs to be explained that the numerical results of this computation will depend not only upon the technical structure of the two industries immediately involved but also upon the magnitudes of the input coefficients of each one of the other ninety-eight industries.

Under the given assumptions the answer thus obtained will obviously be entirely correct. That is, if after having finished theoretical computations we had performed the difficult but still possible controlled

experiment of increasing the final demand for automobiles and observed what happens to the paper output, the latter will have changed exactly by the amount predicted by the previous theoretical computation.

What would we do, however, if our computers refused (as they would have a very good reason to if not equipped with large-scale calculators) to solve any system of more than fifty linear equations? The number of individual industries would have to be reduced in this case by a process of reclassification which in this particular instance would actually mean also partial consolidation. The definition, i.e., the identity, of the automobile and paper industries immediately involved in the formulation of our original problem and of the final answer could of course be left unchanged. But the remaining ninety-eight of the original industries would have then to be combined in forty-eight groups some of which at least would now contain two or more of the original industries.

A new set of structural coefficients, some of them aggregative, that is, hybrid, will now fit into a smaller 50 x 50 table, which in its turn can be transformed into a new system of only fifty simultaneous equations. Our computers will now go to work and arrive at a new answer showing the effect of increased final demand for automobiles upon the paper output.

This new result can be compared with the true answer obtained on the basis of undistorted original data (and also checked by subsequent controlled experiment). If the two turn out to be identical, one could rejoice and note down the whole procedure as a case in which labor pressure results in introduction of technological improvement. More probably, however, the new answer will differ by a larger or smaller amount from the correct one.

There are many alternative ways of aggregating the ninety-eight original industries under some forty-eight broader headings. Each reclassification will lead to a different system of fifty simultaneous equations and most likely also to a different solution. By comparing these alternative short-cut answers with the known correct solution of our problem, on the one hand, and with each other, on the other, it is possible to measure the comparative "goodness," i.e., operational efficiency, of alternative aggregative classifications of the ninety-eight basic industries. Considerable theoretical as well as experimental work on the problem of industrial classification is being done now along these lines.

Even this simplified analysis shows that the decision whether some two or more industries and their products should be consolidated and treated in aggregative terms or not cannot be based upon consideration of only their own technical characteristics. The structural properties

of all the other sectors of the economy must also be taken in account. Moreover, a system of aggregation which can serve as an acceptable basis for the analysis of the interdependence between the paper and the automobile industries might prove to be completely inefficient if one tried to use it in estimating the indirect effects of housing construction upon, say, rubber imports.

The progress of empirical general equilibrium (or if you wish, general disequilibrium) analysis will to a large extent depend upon our ability to eliminate highly aggregative procedures which have dominated this field since the middle thirties; to be more precise, since the emergence of various attempts at the empirical verification and numerical application of different Keynesian models. Hand in hand with the nearly exclusive reliance on global aggregates such as GNP, "total consumption," etc., one notes the widespread use of various methods of indirect statistical inference exemplified by multiple regression (correlation) techniques applied to economic time series. It is easy to understand why aggregation and correlation go together. Direct observation can have only very limited use in discovery and explanation of quantitative interdependence of highly aggregative quantities. The very process of aggregation obscures the sharp outlines of the underlying structural relationships to such an extent that one is naturally forced to give up the simpler methods of direct induction and take recourse to "blind flying" by the complicated but hardly fool-proof instruments of indirect statistical inference. Multiple correlation analysis as applied to typical general equilibrium problems at the same time has the tendency to become ineffectual whenever the number of simultaneously considered variables exceeds half a dozen or so. Thus the habitual reliance on such techniques promotes in its turn continued use of highly aggregative models.

The radically different methods of input-output analysis as described above, being much better suited to manipulation of very large sets of simultaneous relationships, make it possible to conduct the empirical analysis of the national economy as a whole in terms of the peculiar structural characteristics of its many individual parts, thus combining the virtues of general equilibrium analysis with the obvious but all-to-often neglected advantages of direct detailed observation.

III

The conceptual framework of the system of interindustrial relationships as I have presented it to you up to now contained no elements which carried in them any explicit indication, not to say explanation, of necessary change. Most of the original empirical elaboration and application of the input-output method have up to now been essen-

tially static. Comparative statics is really the most appropriate term to be used in this connection. For some time now, theoretical work has been done and factual quantitative information collected which should make it possible to apply the input-output technique also to empirical study of at least some of the more important aspects of economic dynamics.

The static description of interindustrial relationships is formulated entirely in terms of flows of commodities and services. The structural input coefficients are after all nothing but characteristic ratios between certain rates of output and the corresponding rates of input. The bills of goods used in connection with the open general equilibrium systems describe a static final demand in terms of so many tons of steel per year or so many "ton miles of railroad transportation" per year.

The actual economic process—and this is why a separate theory of capital is needed—involves not only flows but also *stocks* of commodities—inventories of raw materials, "goods in process" and finished products, also stocks of machinery and buildings usually identified as fixed capital, and, last but not least, residential dwellings and household stocks of durable consumer goods.

The formal tabulation scheme used to summarize the relevant information on the direction and magnitude of interindustrial commodities and service flows can be also used to describe the distribution of all kinds of stocks among the same different sectors of the national economy. The cell which in the original input-output table contained a figure showing, for example, the amount of the products of the copper industry absorbed in the course of a year by the electrical appliances industry will show in the new additional table the stock of copper products held by the electrical appliances industry on some given date, say January 1, 1949. Similarly the figures entered along the machine tools industry row will indicate amounts, i.e., stocks, of machine tools held on that particular date by each of the tool-using industries.

The previously described set of structural input coefficients can now be supplemented by a parallel set of corresponding stock/output ratios, the underlying theoretical assumption being that technological, in the widest sense of the word, conditions determine the amount of each type of stock which each particular industry must have at its disposal per unit of its output (or, rather, of its rate of output). This of course implies that an increased output would require proportionately larger stocks and that diminished output would lead to a proportionately reduced stock requirement.

Each of the original set of balance equations must be expanded accordingly. If an industry increases its output, its demand for the

products of the other sectors of the economy goes up, not only on account of the increased current input requirements governed by the regular technical flow coefficients; it will absorb additional inputs so as to be able to increase its necessary stock holdings in accordance with the previously defined technical stock coefficients. We are facing here an application of the well-known acceleration principle.

In the opposite case of diminished output, it is necessary to distinguish between inventory holdings in the narrow sense of the word, on the one hand, and investments of the more fixed kind, on the other. The first can be used up, that is, reduced, through transformation into inputs on current account, which is an automatic reversal of the process by which they have originally been built up. Fixed stocks on the contrary cannot be adjusted downward through the same simple process of absorption on current account. When the stock requirements of an industry go down in proportion to its diminished output, the previously accumulated amounts of fixed equipment, buildings, etc., are not diminished accordingly. Instead, the difference between the technically necessary and the actually available stocks results in the appearance of unused, idle capacity.

In case of a subsequent upturn, the current input requirements of the industry will naturally at once begin to grow in proportion to its increased output. To these will also be added inputs required to replenish—in accordance with the magnitude of their respective stock coefficients—the (previously reduced) inventories of raw materials, goods in process, and finished commodities. The call for addition to its stock of fixed investment, however, will be absent so long as the previously reached (or maybe somewhat depleted) capacity had not yet been fully absorbed.

Inserting the two sets—one containing the current input ratios and the other the corresponding stock coefficients—of structural constants in the expanded balance equations, we obtain a set of linear first order differential equations; that is, equations which contain not only rates of flow of various commodities and services but also the rates of changes of these rates of flow. It is a dynamic system; i.e., if solved, it determines all the rates of outputs and inputs over the whole stretch of time, provided the magnitude of various stocks and outputs at any one point of time is given.

This complete dynamic system can be transformed into an open one by elimination of one or more of the underlying basic equations; those, for example, which reflect the input-output structure of the households, government, and, say, the foreign trade (the "terms of trade"). The remaining part of the system will reflect now only the

dynamic characteristics of what roughly can be referred to as the productive sectors of the national economy.

The freely chosen hypothetical bill of goods must in this case also be described in dynamic terms. Instead of asking the static question of what the annual rates of output of all the individual industries would have been if the annual rate of *final* demand for their products were such and such, we must postulate a (possibly changing) pattern of final demand over a period of, say, five or ten years, and then—starting with a given initial distribution of stocks of all kinds—determine the necessary (possibly also changing) pattern of total outputs of individual commodities and services over the same five- or ten-year period. The corresponding picture of increasing and decreasing stocks, investments, disinvestments, and idle capacities would constitute a part of an answer thus obtained.

The general dynamic solution of the open system described above would enable us to answer also the following more pragmatic kind of question: Given the distribution of all available inventories and capacities at some initial point of time, at what particular constant (or variable) annual rate can the final consumption of various commodities be maintained during, say, the next ten years, if at the end of that period the production capacities of all the individual branches of the economy had to reach such and such specified level? In describing the final position of our economy in terms of the *total outputs* (capacities) rather than specific rates of *final consumption*, I emphasize here the fact that in an open system the reallocation of available total outputs between consumption and additional investment at the end of this ten-year period is not subject to any internal constraint.

Preliminary statistical information on magnitudes of the stock coefficients of the ninety-eight industries of our basic classification have been collected for the year 1939, and experimental work on the actual numerical solution of the corresponding empirical dynamic system will be undertaken shortly.

IV

Now let me turn to the subject which I am sure will occupy, and rightly so, a prominent place in the discussion following the conclusion of my formal presentation—the subject of constant input and stock ratios. To begin with, the question is not whether these ratios are constant or not—they certainly cannot be expected to be constant in the strict sense of the word. The real questions are: How does the actual range of their variations affect the empirical validity of the analytical computations based on the assumption of fixed coefficients;

and to what extent and on the basis of what theoretical and empirical procedures can their variability effectively be taken into account?

Considered from the point of view of a particular industry, a change in the input ratios of its various cost elements can reflect an adjustment—within the same technological horizon—occasioned by a change in the supply conditions of the factors or the demand conditions in the finished product market. It can also be directly caused by change in the available technological possibilities. In case of a discovery of a new process, the change in the observable input ratios represents the result of a deliberate choice between the old and the—previously unknown—new input combinations. One can, however, also cite instances of realignment resulting from an actual deterioration; that is, from a narrowing down of technological possibilities. Think, for example, of soil erosion or exhaustion of mineral resources.

Whether caused by new price conditions or a widening (but not narrowing) of the technological horizon, an introduction of new input ratios, since the old ratios were technically still possible, must necessarily signify increased efficiency. That means that an empirical computation based on the original rather than the new set of input coefficients will in general somewhat overstate the effect of a given change in the final demand upon the demand for various original resources.

After the previous comment on the problem of industrial classification it hardly needs to be explained why any concrete instances of changed input ratios would fall within one or another of the possible theoretical types described above depending upon the precise manner in which the line of definitional distinction between various kinds of economic activities has been drawn in the particular area under consideration. The shift of consumer demand from large to smaller cars (incomes and prices remaining the same as before) must be interpreted as an elemental change in basic tastes, if pleasure driving falls within the broadly defined domain of the household sector of the economy. With introduction of a finer distinction between technical household operations on the one hand and ultimate consumers demand on the other, the same change in input ratios must be described as factor substitution caused by specific consideration of cost economy.

To measure the over-all effects of a specific structural change which has taken place in one particular sector of the national economy, I have found it interesting to perform "bill of goods" computations based on artificial, "hybrid" systems of input coefficients. Thus we have replaced, for example, the steel column in the complete 1939 set of structural coefficients by the corresponding input ratios for the year 1929 and then computed the total labor requirements of the whole

economy from it on the basis of the actual 1939 final demand. These labor requirements naturally turned out to be larger than the actual 1939 employment. The difference between the two reflects the over-all laborsaving resulting from the change which took place in the input structure of the steel industry between the years 1929 and 1939.

One of the new and, from the point of view of its possible application to the study of technological relationships, most promising developments in pure theory of production is the study of maximizing and minimizing choices between discontinuous, discreetly defined, alternative sets of linear input ratios. Since a special session of the Econometric Society has been devoted to the subject of "Linear Programming," I will not discuss it here.

V

So much for the theory of variable input ratios, but how about the facts? The empirical evidence available at the present time consists of the tables of interindustrial relationships for years 1919, 1929, and 1939. The first two, results of single-handed purely exploratory efforts, are very rough indeed, and even the last, although much more comprehensive in its scope, can hardly be considered as representing more than a first approximation to a thorough statistical job that could be done under the present-day conditions. The large size of the "Undistributed" outputs (approximately 25-30 per cent of the totals even in 1939) gives a fair measure of the deficiencies of the empirical data now available for testing purposes. Due to disparity in the basic industrial classifications (the 1919 and 1929 figures are much less detailed), the three tables can be made comparable only in terms of thirteen grossly consolidated industrial groups. This implies a degree of aggregation far in excess of that which would be considered desirable for purposes of the following empirical test.

This test has been designed to compare the magnitude of error resulting from a purely mechanical application of the input-output technique, with assumption of constant input coefficients, to "prediction" of unknown *total outputs* of individual industries from a known bill of *final demand* with the error resulting from a similarly mechanical application to the same data of the more conventional methods of prediction currently in use.

The total output of each of the individual industries has been "predicted" for the years 1929 and 1919 by application of the input-output technique on the basis of constant 1939 input coefficients. The actual computation consisted of the following steps:

1. The original 1919, 1929, and 1939 tables were reduced so far as possible to a comparable basis through: (a) consolidation into a

13 x 13 grid; (b) deflation of the 1919 and 1929 figures by specially compiled thirteen separate price indices with a 1939 base.

2. The theoretical system of thirteen linear equations based on the 1939 input coefficients was solved for each of the thirteen total outputs in terms of the final demands "per dollar worth" of each of the thirteen kinds of output.

3. The total 1929 output of each of the thirteen industries was indirectly computed (i.e., predicted) through insertion of the actual 1929 final demand figures into the previously obtained solution of the 1939 equations. The same method was used to predict the 1919 total outputs.

To reproduce the application of conventional statistical methods to the solution of the same problem of predicting the 1919 and 1929 total outputs of each of the thirteen industries from the given 1919 and 1929 final bill of goods on the basis of the 1939 experience, two additional computations have been performed; one is based on the assumption that the 1919 and 1929 total output of each industry bears the same relation to the aggregate final demand of that year as in 1939. This is essentially the prediction of the total output of individual industries on the basis of their relationship to the Gross National Product. The third computation is based on a somewhat different assumption according to which the output of each industry bears a constant ratio not to the aggregate final demand but rather to the final demand for the products of that particular industry.

The comparison of the discrepancy between the actual 1919 and 1929 outputs and the outputs "predicted" for these years from 1939 data on the basis of the three alternative methods is summarized in the table below. It seems to point toward unmistakable superiority of the input-output technique at least in this particular case.

STANDARD ERRORS OF "PREDICTION" OF THIRTEEN INDUSTRY
OUTPUTS IN 1919 AND 1929 FROM 1939 DATA
(in millions of dollars)

	1919	1929
Method I*	380	237
Methods II†	1363	1744
Method III‡	2021	1539

* Input-Output Method.

† Method based on 1939 proportion of each industry's total output to the Aggregate Bill of Goods.

‡ Method based on 1939 ratio of each industry's total output to that particular industry's contribution to the final Bill of Goods.

Even if the assumption of fixed coefficients were proved to be tolerably acceptable for pragmatic purposes of short-run analysis,

there can be no doubt that an intensive and relentless study of structural changes which mark the development of every national economy constitutes an important, maybe the most important, task of empirical research. If such study is to lead to something more than high-sounding generalities, it must be ruthlessly concrete; it must be specialized in detail and diversified in coverage. In analyzing the changing structure of the steel industry, we must get our information from the technical literature, from ironmasters and from rolling mill managers. To study the changing pattern of consumer behavior, we have to develop practical co-operation with psychologists and sociologists.

This call for detailed empirical analysis does not sound new. Gustav Schmoller and his German Historical School filled volumes, shelves, and libraries with their monographs. In more recent times, the essentially similar empiricist school of statistical economists has—using figures instead of words as its method of description—provided us with a very large amount of quantitative information.

Why is it that despite such prodigious accumulation of building materials the edifice which we are supposed to be erecting still seems to be in the stage of preliminary excavations? Some tell us that all we have to do is to haul in some more brick and mortar. Is it not possible that what is needed even more is a workable building procedure? Without having given them any detailed specifications, how can one expect our suppliers to deliver materials which will actually fit together?

DISCUSSION

SOLOMON FABRICANT: Bold and imaginative pioneering like Professor Leontief's needs and deserves full criticism if it is to be understood, evaluated, and profited from. His own present paper makes, I think, a substantial contribution to that criticism, and sets a far mark for those who follow in his track.

The basic assumption of constant input ratios (or technical coefficients) has already been emphasized, and by no one more than Leontief himself. I shall therefore pass over it and draw attention to another, somewhat different, one that is employed in at least certain sections of Leontief's work. Recall Leontief's use of the technique in his discussion of wages, profits, and prices.¹ In that discussion, Leontief asked this sort of question: By how many per cent would the price of each kind of goods change if the wage rate in one or more specified industries were to change by x per cent? He then turned the crank of his apparatus and an answer came out. That answer, he said, takes into account both direct and indirect effects of the wage change. But are all the effects really taken into account?

A wage increase in one industry will, according to Leontief, lead to a price increase in that industry's product, thus to increased costs of materials used by other industries, and then to price increases in the products of those other industries. These price increases in turn lead to other price increases via costs of purchases, and so on, until ultimately the initial change has fully worked itself into the system. But the wage increase we started with must also affect wage rates in other industries. For example, there may be immediate trade union demands for equal treatment. Leontief's "pound of *ceteris paribus*" is surrounded by too weak a wall to contain the assumption that other wage rates will not be affected. These changes also, then, will affect prices. In other words, there are other channels or interrelationships among prices besides those defined by Leontief's equations. The final situation will not be the one described by Leontief, but something else.

In fact there may be no final static situation. The initial wage change postulated may start cumulative forces in motion, setting up a "spiral" of inflation or deflation, for example.

A related question concerns the fact that Leontief lifts the 1939 data, with which he starts, out of their context. That is the context of economic change within which they came into being and that is shown (very simply) by the chart of "series indicative of business conditions" in his book (page 10). He in effect assumes 1939 to be an equilibrium situation, introduces the wage change or other change, and emerges with the new equilibrium, after the lapse of an unknown span of time. If 1939 is not in equilibrium—and that it is, hardly seems likely—everything he does with the 1939 data requires re-examination. To refer to the problem of wages, even if *no* special wage change were postulated, the 1939 situation—not being one of equilibrium—would change in respect of prices and wages and other respects. It might be

¹ *Quarterly Journal of Economics*, November, 1946,

said that the additional wage change—the one postulated—would simply be superimposed on, or added to, the other changes inherent in the situation; but would it merely be *added* to it?

The inclusion of stocks and other dynamic elements in the system, as presently proposed by Leontief, may meet some of these criticisms, but I do not see that it will meet all of them. For example, the dynamization of the system, as Leontief describes it, does not allow for speculative building up of inventories and other assets. I find that I have come, after all, to quarreling with the assumption of fixed technical relations—in this case, between capital and production.

Whether the assumption of fixed production coefficients is valid cannot, as Leontief points out, be argued *a priori*. We must appeal to the facts. In the test Leontief has presented he poses the question whether his assumptions are better than others that might be made. But is that the question? The other assumptions might be very bad indeed. The question is, rather, how good are his assumptions of fixed production coefficients; i.e., how stable are they? The test would throw some light on this question if we were to compare the difference between actual and computed output, for each of the thirteen groups, with the output that is being estimated; that is, the output sold to groups other than households. I have done this for 1929, for the thirteen groups combined, utilizing details kindly supplied by Professor Leontief. The mean difference (or error of estimate) in 1929 is 200 million dollars (1939 prices); the mean output being estimated is about 3,300 millions. The ratio of the one to the other is quite small. Indeed, it is surprisingly small and maybe encouraging. But can it be that offsetting of errors has occurred within the very wide groups covered, and perhaps also among the several input-output ratios used in estimating each industry's output? I hope that Leontief will show us how the individual input-output ratios of the three years compare with one another, and how the input-output ratios for groups less gross than the thirteen covered behave in time. Comparisons for some finer groupings should be possible, even if not for all. Are not these the comparisons in which we are really interested? If there are patterns of change in these ratios, we might hope to discover them. And then we would have something interesting to explain.

The discussion has led us to the uses of the basic table. So far it has been employed only in conjunction with the technique, to answer questions of a type that is not very promising, at least at this stage of our science's growth. However, the table has great interest apart from the technique and the perhaps restrictive assumptions entailed by the use of the technique. I go along wholeheartedly with Leontief's feeling that study of the "structural changes which mark the development of every national economy" is an important task. The input-output table is a useful way of organizing and expanding our knowledge of these changes in interindustry relations. For example, if we are to understand the growth of the service industries—an apparently characteristic concomitant of economic development—we must know how these industries have been connected with other industries and

with the household, and how these connections (one aspect of which is revealed by the input-output ratio) have been modified during the course of economic development. We must know not only what has happened to consumer purchases of final services but also what has happened to consumer purchases of commodities in the production of which use is made of intermediate services, and so on.

We need to discover whether history confirms the existence of patterns that we suspect are characteristic of economic development. That is why we need, among many other things, these input-output tables—and for more years and in more detail than now available. A series of such tables need not be more pretentious than, and could be at least as useful as, ordinary indexes of production.

IRWIN FRIEND and WALTER JACOBS: This paper is concerned with the limitations of the input-output analysis or study of interindustrial relationships developed by Mr. Leontief and his co-workers. In examining these limitations, we have not tried to be exhaustive. Thus we do not take up the dynamic model or the use of a rectangular matrix, since these are in a very early stage of formulation. Neither do we discuss the imperfections of the data now available or likely to be available soon or flaws in present procedures when those procedures are followed merely because of the absence of the information necessary to improve them. Those of you who are familiar with the amount of time and effort required to assemble the data for the National Income and Product accounts will appreciate what is involved in amassing the vastly more detailed information needed for applying the technique under discussion.

The input-output analysis is based on the fundamental assumption that apart from technological changes there is a constant ratio over time between the volume of production (output) in any industry and the quantities of products (inputs) which it absorbs from each of the other industries. It is further assumed that important technological changes are predictable and sufficiently infrequent so that an explicit adjustment can be made for them.

There are two general types of problems for which this analysis has been used: first, the construction of a general equilibrium system for the economy; and, second, estimating requirements or programming the use of resources for a given objective. The following comments will briefly discuss the theoretical and practical limitations of the input-output analysis from both points of view. Particular attention, however, will be given to the implications of the input-output analysis for setting up an over-all equilibrium model for the economy, since this application of the technique has more general interest and since one complete study of this type—"Full Employment in 1950," by the Bureau of Labor Statistics—has already appeared.

In a fixed ratio system, if final demand is given in real terms, then production and input can also be derived in real terms. Obviously, therefore, if the assumption as to constancy of physical input ratios is warranted—and if the necessary data for some base period could be obtained—this technique

should at least be useful for estimating requirements and for related purposes. However, there is no *a priori* reason to expect that the input ratios are constant over time unless a number of conditions are satisfied. First of all, the industry breakdown would have to be extremely detailed. Otherwise a varying product mix might result, for example, in substantial changes in the physical consumption of steel per unit of output by the electrical machinery industry—even assuming no technological change—though the steel consumption per unit of output for each of hundreds of items produced by the electrical machinery industry might remain reasonably constant.

Another necessary condition for the theoretical validity of a fixed input ratio assumption is the specification of more industries (or productive activities) than commodities produced by the system. This is required in order to allow for material and factor substitution (or for choice). Leontief's model is deficient in this respect since it specifies the same number of productive activities as commodities produced. As long as a commodity can be produced by more than one combination of input factors, this model need not give satisfactory results. Thus steel can be made both with low-grade ore from deposits near the blast furnaces and high-grade ore a considerable distance away—or with different combinations of ore, scrap, and coke.

As Leontief has pointed out, he assumes the input ratios to be independent of the prices of the respective cost factors. This characteristic of his relationships raises some additional doubts about their utility not only for setting up a general equilibrium system for the economy but also for the more restricted purpose of estimating requirements. Conceptually, of course, it is possible to change the structure of the input-output relationships to include not only vast commodity detail but an even larger number of productive activities than of commodities; this leads to a model employing a rectangular matrix, which we do not discuss.

It may be noted that a problem in subdividing industries will arise when there is a relation between the outputs of different products—for instance, when one is a by-product of another. Thus, the production of beef and of hides cannot be assumed to vary independently.

A fixed ratio system such as Leontief's further supposes no optimum level of output or economies of large-scale production. The invariance of input per unit of output is particularly questionable for such items as transportation and power.

We are not considering in this discussion the effect of technological changes on the input-output analysis. It is clear that, under normal circumstances, making allowance for these changes poses some practical difficulties. With the acceleration of change which occurs under wartime conditions—when this technique is asserted to be of particular value—such difficulties are greatly increased.

These objections to the hypothesis of constant proportionality of input-output relationships might not be considered too important for many purposes if the theory with its obvious limitations is in close enough agreement with the facts. The empirical evidence presented so far is not particularly

convincing in this respect. For example, in the BLS study a comparison for two commodities of observed values of output with expected values based on the assumption of constant input ratios indicates fairly wide disparities. These discrepancies are explained qualitatively in terms of technological and other (inventory) changes, but a quantitative reconciliation of actual and anticipated results—and on a much broader scale—is required for the test to have much meaning.

In Leontief's present paper, the input-output technique and two other procedures are compared with respect to their average errors in estimating total outputs of individual industries, given the components of final demand. In the limited space devoted to this comparison, it was not possible to present all the data necessary to appraise the full significance of the procedure followed. Certainly, however, the two other approaches which he finds inferior to the input-output technique—viz., estimating total output of individual industries on the assumption of a constant ratio relationship to the gross national product or on the assumption of a constant ratio to the final demand for the products of that particular industry—can hardly be considered valid alternatives to the assumption of constant input ratios. It is difficult to conceive, for example, of anyone attempting to estimate total steel requirements for the economy on the basis of the ratio in some other period of total steel output to the almost insignificant amount of steel appearing as a component of final demand (or gross national product).

Presumably, a real alternative to the input-output technique for estimating the total output associated with a given final demand would be to set up a direct statistical relationship between total output (e.g., steel) and each of the components of final output (e.g., automobiles, construction, etc.) to which it is most closely related. More complicated relationships, permitting the substitution of a few directly competing commodities, might also be set up. It is quite possible that even after such tests, with due regard both to degree of accuracy and expense, the verdict would still be in favor of the input-output technique, but this still remains to be proved.

Having discussed the implications of a fixed ratio system with respect to quantities, we shall next consider the implications as to prices or values. This aspect of the input-output analysis is of particular interest since there is practically nothing on it in the literature. Also, it is crucial to the construction of a general equilibrium system for the economy; i.e., a system in which prices and quantities are determined by their mutual interaction.

Leontief notes that when factor costs per unit of physical output are given (and the table of input ratios is known) prices may be calculated uniquely. However, in most economic problems in which prices are to be derived, unit factor costs will not be directly available, and it is then not necessarily true that only one set of prices will satisfy the given conditions.

To illustrate, the problem of determining both production and prices when factor payments in each industry and the final bill of goods are given in money terms has no unique solution, for it is easy to show that at most relative prices and relative levels of production are obtainable. However, not even the

relative solutions are unique; there will be in general many distinct sets of relative prices and relative levels of production which will satisfy the initial conditions.

The problem in the paper on "Full Employment in 1950" was a little different, since only the factor payments were assumed and the final bill of goods depended on these and on the prices to be determined. Moreover, if the solution could be obtained in terms of relative production and prices, the absolute levels would be fixed by the assumed increase in productivity. In the general case, this problem might have many solutions, or even no real solution; in the particular case of the paper, where a solution was found, there is good reason to believe it is not the only one which would satisfy the data. Although it is conceivable that in an actual problem all of the solutions to a given set of initial conditions might closely resemble each other, doubt as to the validity of a given answer can be erased only by proof that no materially different solution exists.

Furthermore, the same lack of uniqueness will prove troublesome in the case of an attempt to fit considerations of demand and supply into the technique or otherwise to introduce the economic relationship of unit factor costs and prices. In the absence of a tie-in with economic price theories, the meaning to be attached to the prices derived in any application may be far from clear. These considerations suggest that the input-output method may be useful almost exclusively in areas where price changes are irrelevant.

Apart from theoretical considerations, some remarks on the practical aspects should be made. Such proposed applications of the technique as the programming of a complex operation require computations so extensive as to call for an electronic computer—in some cases they are far beyond the scope of any computer yet conceived. Few problems of this type would justify the expense involved in solving them—although it is true that when the problem is important enough to warrant the expense, the input-output method may in some cases be the most satisfactory approach to a solution. Moreover, it may be noted that many of these applications essentially relate to management rather than to economic problems, and require the application of a rectangular table as well.

It is worth emphasizing that most of the conclusions derived from the full employment study were in no way dependent on the table of input ratios or on the framework of the interindustrial relationships. The specific assumptions made in the process of arriving at the constant values used in the equations effectively fixed the level of total output, the general price level, and the extent to which the capacity of labor to produce at full employment exceeded the demands for product under the assumed consumption and investment patterns. The main contributions of the input-output method were the distribution of total product among the various industries and the structure of relative prices—and we have already noted that the answers obtained may not be the only ones possible.

To conclude, we feel that the input-output analysis may have considerable utility in a number of management problems involving the programming of an

operation (e.g., the flow of materials to an assembly line). This, of course, is a purely mathematical and engineering problem having little interest to economists. It may also have some use in the estimation of material requirements (e.g., the materials required for a war program of given dimensions), though a conclusion must await a practical test of the effectiveness of the method for this purpose. Finally, we are dubious about the usefulness of the technique in setting up a general equilibrium system until at least the problems relating to prices have been resolved.

MARVIN HOFFENBERG: The previous speakers have dealt mainly with the theoretical aspects of the interindustry relations study (input-output). I would like to discuss some of the operational problems in the construction of the input-output chart and in the application of the technique based upon it.

The input-output chart is a system of double entry bookkeeping in which the transactions of any one transactor group industry with all other groups are tabulated. On the one hand, the source of a transactor groups' revenues is shown, while, on the other hand, its specific disbursements are shown. From this point of view the basic interindustry flows are an extension of the system of social accounts, by transactor group, constructed from the national product and income data. The Leontief system is a "grosser" one, since on the output side it includes the flow of intermediate as well as final output, while on the cost side it includes services and materials as well as the gross value added (gross national product originating) in the industry.

The construction of such an elaborate system of accounts places a strain on our current body of statistical information. All the existing input-output charts were derived almost exclusively from secondary sources. There is no one body of data that can be drawn upon for the needed information. The problem was to piece together bits of information from many sources and to make them as consistent as possible within the established conceptual framework. The main sources of information were the various censuses, from which were obtained control totals on production, trade margins, some data on materials consumption, and product detail that could be used in allocating output. This reliance on secondary sources was dictated more by financial limitations than by choice. The next time such a study will be made we plan to rely not only on secondary sources but also on the results of a field survey designed to obtain input information from accounting and engineering records.

The input ratios derived from the empirically determined interindustry flows are subject to estimating errors. However, there are certain compensating features in the system. All production in the base year is "explained" by the system of flows. If an overallocation of a product is made to one industry, then an underallocation must be made somewhere else. That is, if one input ratio is too high, then another, for the same product, must be too low. These errors are carried over whenever the technique is used and re-

sult in similar biases. However, I would not claim that the errors balance each other.

Applying the "input-output" technique to a year other than the benchmark presents different types of data problems. The technique is often used to translate a given level and composition of final demand into total output, on an industry by industry basis. Usually the final demand corresponds to the commodity side of the gross national product and is expressed in current dollars. This demand is assigned to the industry of final fabrication and then converted into 1939 dollars. The next step is to insert the assumed demand into the "input-output" system of equations and to solve for total output. The various statistical series needed for these steps are often the result of the administrative process. As such, they are not designed to fit into a specific framework, and hence are at times inconsistent with one another. These inconsistencies exist not only on a statistical level, e.g., establishments versus firm reporting, but also on a conceptual level. Numerous "bridges" and cross-tabulations must be constructed in order to use these statistical series. Furthermore, since problems of deflating values expressed in current prices still exist, as well as changes in product composition, the index number problem is not eliminated. However, some of the weighting problems are minimized since the system is fairly detailed. These problems are not unique to the input-output analysis but are common to all quantitative analysis.

During wartime the input-output system provides a frame of reference for program planning—something we lacked in the last war. All planning is done in terms of end products; i.e., in terms of aircraft, tanks, clothing, etc. It is necessary to translate given programs of final output into levels of total output and then to trace the impact on manpower, natural resources, and industrial facilities. The first step in this chain is the system of inter-industry flows described at this session. These flows indicate the direct inputs into the industry and are used to estimate the indirect requirements.

Once the decision is made to use the input-output frame of references a statistical reporting system can be established to obtain data on the flow of goods and services. This will eliminate many of the data problems discussed above. Also, it is not necessary to assume a constant set of input ratios over time. In fact, the job of any group responsible for allocating resources would be to change the input requirements for any scarce material. Furthermore, as Professor Leontief has pointed out, it is possible to draw upon the knowledge of commodity and industrial specialists in a manner not elsewhere possible.

One can hardly discuss the input-output system without some comments on the input ratios now used. Currently, we deal with a system of linear simultaneous equations in which the inputs are proportional to output. These inputs are limited to purchases on current account and exclude capital requirements. Both fixed and working capital are now taken as exogenous variables. Proportionality is just one and perhaps the simplest abstraction of the industrial process. We use proportionality because we have no empirical

evidence on which to base other forms of the production process. When we have obtained such information we will gladly incorporate it in the technique. Proportionality is not inherent in the Leontief system and it will work under nonproportional assumptions. For the 42 industry systems now in use, and with our current computational methods, calculation time on nonproportional input ratios is probably not prohibitive.

TJALLING C. KOOPMANS: I shall confine my remarks to points of contact between the models developed by Professor Leontief and certain sections of current economic theory. I shall thus not be concerned with the difficulty of finding data that correspond to the theoretical concepts. In particular, I need not question the assumption of constant input-output ratios, because conceptually such constancy can be produced by a sufficiently fine breakdown of production into elementary reproducible activities. Since Leontief's model and its presentation are influenced by a concern with measurement, my remarks are to be regarded as supplementary rather than critical.

However, some criticism seems in order of Leontief's use of certain terms in meanings different from those usually attached to them in economic theory. "Supply and demand equations" are usually conceived as relationships expressing by what quantity suppliers and consumers respond to a given price. The same term should not be used for the identity (or equilibrium condition) which says that, in the absence of changes in stocks of a commodity, the quantity supplied equals the quantity demanded.

Likewise, I feel that the designation "general equilibrium analysis" for the model under discussion is inappropriate. This term usually connotes analysis of the process whereby the exercise of optimizing choice by each of a number of individuals or firms brings about determinate prices and quantities. In the model that has been presented there is no study of choice. Even in its open version the model is mechanical in the sense that specification of the final bill of goods uniquely determines the rate of output of all industrial activities.

It may be useful to draw a distinction between planning models designed to study and guide optimum allocation of resources toward some stated objective and models intended as a description of economic behavior in reality. Reference to this distinction will clarify apparent contradictions. For instance, the acceleration principle, declared dead yesterday by Professor Haberler, is very much alive today in Professor Leontief's presentation. The contradiction is resolved if we realize that the acceleration principle is dead as an explanation of actual investment fluctuations during business cycles but makes very good sense in a model designed to plan investments over a period in order to attain levels of production increasing in a preassigned manner. Similarly, the use of technological information stressed by Leontief seems adequate for a planning model, but the attempt to develop a dynamic model of actual behavior including such matters as investment in inventories and in productive equipment is likely to reintroduce the difficulties of statistical inference from time series which he has been hoping to avoid.

The remainder of my remarks is concerned with the use of the model under discussion for the theory of allocation of resources. Let us define

primary inputs, not in a manner dependent on where the model is "cut open," but as those inputs of which the amount is subject to limitations beyond the influence of the planning body. Such essentially limited inputs comprise, for practical purposes, the maximum labor force, the amounts of land of various grades in existence, mineral resources, and, in dynamic models, the initial amounts of capital equipment of various kinds. Now, as was remarked by Professor Herbert Simon in another meeting, the mechanical nature of the model entails that if a given bill of goods just absorbs the total amount of labor available, it may either fail to utilize all, or require more than, the land or the capital equipment available. This unrealistic feature of the model can be avoided by placing more columns in the coefficient matrix than rows; that is, by introducing more ways of producing things than things to be produced. Choice between alternative combinations of industrial processes can then be directed to utilizing to the limit of availability all primary inputs and to maximizing the composite output in the sense that a position is sought in which any further increase in the output of one commodity necessitates a decrease in the output of at least one other commodity.

If such a position is attained, one can evaluate the technological ratios in which individual outputs are substituted for each other by changing the relative weights of processes in the combination applied. By interpreting these ratios as imputed (relative) prices and by extending this system of imputed prices to primary inputs and to such intermediate products as may be introduced, a model is obtained which is a special formulation of the theory of allocation of resources developed¹ by Meade, Lange, Lerner, and others. To the extent that perfect competition exists, ordinary market processes bring about the establishment of such price ratios. Where due to monopoly or oligopoly, or due to price control in a war economy, money prices lose their usefulness as guides to allocation because they fail to express the relative scarcity of the commodities involved, explicit evaluation of imputed prices by means of a model of production as here considered is an important tool toward optimum use of available resources.

RAYMOND W. GOLDSMITH: In contrast to the previous discussion these brief remarks will deal not with the analysis of interindustrial flows of commodities and services but rather with the applicability of input-output analysis to fields in which it has not yet been used.

There seem to be two essential characteristics of the input-output approach, one formal and one substantive. The formal characteristic is the possibility of casting the data in the form of a square array in which one aggregate is exhaustively allocated on the basis of two criteria. The substantive characteristic is the existence of a system of basic, reasonably stable, economically meaningful interrelations which can be expressed in a system of simultaneous equations.

If the formal characteristic of the input-output approach, regarded as a

¹ J. E. Meade and C. Hitch, *Introduction to Economic Analysis and Policy*; O. Lange and F. Taylor, *On the Economic Theory of Socialism* (Minneapolis, 1938); A. Lerner, *The Economics of Controls* (New York, 1944).

"framework for classifying data," is decisive, then obviously the approach can be used in many fields of economics beyond that to which it has hitherto been applied. A few examples may suffice.

1. In the field of international or interregional trade the aggregate to be allocated is the total trade within a group of areas. The rows would show, for a given area, the destination of its exports and the columns the origin of its imports. Both might be drawn up to include or to omit the so-called "invisible" items.

2. In applying the technique to the capital market there are at least two aggregates that may be allocated in a square array. The first is total saving, either net or gross; the second total asset transactions.

In the saving table the rows would show changes, over the period under study, in net claims (including direct ownership as a form of claim) of one "industry" against another, the columns changes in liabilities, equity being regarded as a self-liability. Compared to the input-output tables the number of industries may be small, particularly in manufacturing. On the other hand, households lumped together in one row or column in the input-output tables would have to be divided into several occupational, social, or income groups.

The transactions table may be set up in different degrees of grossness. At one extreme the aggregate to be allocated includes all transactions in assets, including intermediate ones. A lesser degree of grossness will, in general, be found more fruitful; this might include all asset (except cash) transactions by ultimate economic units, but only the net transactions of intermediaries. In such a table the rows would show all asset acquisitions by any one industry from another industry, and the columns all asset disposals. To be economically meaningful separate tables should be drawn up for specific types of assets such as stocks, long-term claims, or short-term claims.

3. If the input-output technique is formally applicable to the capital market, then it can also be applied to money flows. A money flow table would differ from the usual input-output tables on two main points. First, it would eliminate accrual and imputation items, particularly depreciation. Secondly, it would add certain capital market transactions; namely, in Professor Copeland's terminology, changes in loan fund balances.

4. In the field of national wealth, the input-output technique would likewise lead to a double application. In the first, the aggregate to be allocated is total (duplicated) assets and liabilities of all units. The rows would show, for a group of units, the claims at any one date against other groups (including direct ownership), and the columns the liabilities to other groups, including equity. In the second application, the aggregate would be physical wealth, necessarily unduplicated. Here the rows for every industry would show its holdings of physical assets, and the columns the industrial origin of these assets.

The formal similarity between the familiar input-output tables and the tables just sketched is undoubtedly pronounced. But what about the much more important similarity in substance? The answer to this question is more difficult and is not the same for all the tables mentioned. It also depends on how some of the open problems in the field of input-output analysis proper are settled.

The distribution of an area's total exports and imports is certainly not a matter of chance, but the reflection of a number of basic technological and economic factors familiar from the study of international trade. On the other hand, both the volume of total exports and imports, and particularly their distribution by commodities and by areas, is subject to more violent and more frequent changes than we may expect to occur in the usual input-output tables. In other words, "technical coefficients" change so rapidly and, in many cases, in a way so much dominated by noneconomic forces, that the application of the input-output tables becomes doubtful until an effective technical way is found of dealing with such changes in coefficients.

The character of the relationships underlying a saving table, or a related sources-and-uses-of-funds table, is not basically different from those at the bottom of the usual input-output table. What the rows in the saving table for a given group of economic units show is the placement in (or the net withdrawal from) claims against or equities in other groups; i.e., the structure of the groups' (net or gross) saving or the use of its funds. The columns in turn indicate the structure of its financing or its sources of funds. The distribution of saving among outlets may be assumed to be strongly influenced by basic economic factors or behavior patterns. Compared, however, to the structure of demand for commodities and services, the coefficients that would be assigned to the different saving outlets are undoubtedly very variable. Variability in the columns indicating, for each group, the distribution by origin of total funds absorbed is likewise very great. The applicability of input-output technique, therefore, again depends on overcoming the limitation to fixed coefficients.

Moving from a table allocating the periodic flow of saving to one showing the allocation of stocks of assets and liabilities, the problem becomes easier in some respects and more difficult in others. The distribution of total assets among creditors and holders and of total liabilities and equities among debtors and owners fluctuates less violently than similar distributions of saving. On the other hand, the structure of assets and liabilities is more influenced by noneconomic factors than are annual uses and sources of funds. On balance, if it is a question whether coefficients derived from a table referring to one date or one period can be applied to other dates or periods in the not too distant past or future, the assets-liabilities table will probably do better than the net saving or the use-and-sources-of-funds table.

This leaves the wealth tables, regarding wealth as tangible physical assets, possibly even with a limitation to man-made tangibles. Here we are back close to the reasonably stringent technological facts and behavior patterns of the familiar input-output tables. The distribution of total wealth by industrial origin, which in this case is generally also its distribution by type, shown in the rows, is fairly well determined for business and government by technological considerations. For households there are at least three determinants: technological facts; demand schedules, particularly insofar as they determine the distribution of demand between durable goods and other commodities and services; and the possible substitution of tenancy or hire for ownership. It is particularly the third factor which is liable to render the coefficients more variable than those of the input-output table.

This brief discussion indicates, I hope, that there are fields beyond the present area of utilization where the input-output technique may possibly be applied with profit. We should not expect, of course, that the present techniques can be bodily lifted and applied without changes to these new fields. We must be prepared for a substantial period of experimentation and adaptation of techniques. From it I would expect two steps forward. First, the application of this powerful technique will enrich the fields to which it is applied. At the very least it will give some of them a superior mode of presenting and co-ordinating their material. It possibly also may permit them to discover new relations and provide leads to their explanation. But input-output analysis should also benefit on its home grounds, by being confronted in clearer form with a number of basic problems of technique and of underlying theory; by being made to define the scope of the method; and by learning what it can and what it cannot do. I am therefore closing by expressing the hope that an opportunity will soon arise of experimenting with the application of input-output technique in hitherto foreign fields.

OSKAR MORGENSTERN: Of the manifold problems that are raised by input-output studies the most difficult is the one of solving a large number of linear equations to which these studies give rise. As Professor Leontief himself has stated, there exists no experience in this field even in the natural sciences. Economists are therefore attacking problems that have been shunned in the most developed sciences. Partly this is due to the fact that hitherto electronic computers of formerly unheard of power have not been available, while they are now expected to play a decisive role in furthering knowledge in many fields. They will certainly be highly significant for economics in performing mathematical and statistical operations so far entirely beyond anybody's reach. But as with many new developments, enthusiasm may run away with people. Therefore it is important to point out that grave difficulties remain, even if exceedingly complicated computational operations are becoming a possibility. These difficulties were recently investigated for the first time systematically by J. von Neumann, H. Goldstine, and others.¹

The problems arise even when there are only ten variables and equations and when the necessary operations are entirely "elementary"; i.e., when no limiting processes or transcendental operations occur. This would, however, be the case if the equations are linear differential equations as necessitated by some of the foreseen dynamical economic models.

The difficulties are several. We mention only three. There is, first, the question whether the economic problem has been brought into the proper mathematical form. Although this is by no means self-evident, we shall assume this to be the case. Second, there is the question of the accuracy of the knowledge of the parameters; in other words, of the basic data. From the mathematical point of view this is considered to be the primary point. The third type of difficulties arises in the process of computation itself, since, in view of the complexity of the problems, certain physical obstacles are

¹ "Numerical Inverting of Matrices of High Order," *Bulletin of the American Mathematical Society*, 1947. Cf., also, V. Bargmann, D. Montgomery and J. von Neumann, *Solution of Linear Systems of High Order* (Princeton, 1946).

encountered, no matter what type of machine is used, that make it indispensable to face the influence of all these factors without any reservation whatsoever.

All this does not yet take into account whether the underlying economic model, essentially derived from Walras, is a satisfactory description of economic reality. While grave doubts can be voiced in that respect, I shall entirely neglect this possibility here. This is not the same problem as the first one mentioned earlier, which is whether the mathematical formulation of the model actually chosen is mathematically satisfactory. It is, of course, possible that a model may be intuitively satisfying but not lend itself to mathematization at present. Or, one may find models more easily to be brought into a mathematical form where, however, doubt remains that it gives a good picture of reality.

The main problem, therefore, is for us to find out whether the data are good enough for these purposes. This may seem like a very trivial matter when one is indeed dealing with the solving of one hundred equations and thinks of the use of such advanced instruments as electronic computers. Yet this is nevertheless the decisive issue. On it hinges the stability of the mathematical solution and thereby the usefulness of the entire enterprise. Unfortunately, it is a widely neglected field in economics. There is a tendency to be satisfied with a kind of accuracy that is entirely spurious and consists merely in finding out that sources are properly used and whether transcriptions of figures from one use to another are correctly made. Often accuracy is identified with detail; for example, the giving of figures with many decimal points when the real inaccuracy has already been permitted to enter into a much rougher figure.

We have made detailed studies in Princeton of the kind of information currently used in economics and have, as a rule, found the results absolutely shocking. Time and space here forbid us to go into these matters now; they will be described in future publications. Our results show that it will be necessary to make a great effort to gather new data of a superior quality with the errors of observation known as much as possible. Only then will it be possible to approach the problem of inverting the matrices in a rigorous sense and to determine the stability of the solutions obtained.

More specific remarks ought to be directed towards the following:

The tables thus far constructed (one of which was even inverted with apparent success) have one characteristic that ought to be carefully examined: they show many zeros; i.e., industries are buying from and selling to only a small number of others. This may be due to defective information and/or to the classification of industries. There are also the high undistributed amounts to which Professor Leontief has already referred. These properties of the matrix make an inversion much simpler and give more easily a stability to the solution than if the matrix fields were more evenly filled, as one might have to expect on general grounds.

The constancy of coefficients of production is, as far as I can see now, a less damaging assumption than most critics of input-output studies seem to assume. In this respect I am in agreement with Professor Leontief and others. Methods are available to deal with increasing and decreasing returns; for

example, as described by Professor Koopmans. Even if the constancy of the coefficients (for short run) should ultimately prove to be too artificial, it would be inadvisable to consider anything else at the moment in view of the immense difficulties of dealing with nonlinear relationships here or anywhere else. Fundamentally, this is again an observational-empirical issue and the answer hinges once more upon the accuracy of our observations. Except on the basis of very general impressions of doubtful value, no one is now in a position to make decisive statements about constancy of production coefficients one way or another.

Professor Leontief's comment that demand and supply curves are non-controversial—provided they are of the customary nature—seems to me to require caution, although most economists would probably be of this opinion. It suffices to recall that nobody now has a method for constructing non-additive supply curves even after the long discussions which were broken off without any decision in the matter following Sraffa's paper of 1926. Yet virtually all supply curves are nonadditive. Similar remarks are appropriate concerning demand curves, many of which have the same disturbing property. Those that are additive in the ordinary textbook manner also offer deeper problems and can be shown to be less universal tools than commonly assumed.² These curves are, however, part and parcel of the model-side of input-output studies with which I did not want to get involved at this time since far more elemental questions come first. Of these the principal one is to get good data with known errors of observation.

In summa, I feel that studies of this type hold very great promise and should be pushed as hard as possible. But it seems desirable to make clear that one is attacking a formidable problem for which we may not at all be ready. There is not only the factual side, badly in need of thorough consideration, but one is also confronted with purely mathematical and even computational difficulties of really first order. Economists should know that they are venturing into a field where there is absolutely nothing in past experience of any science to guide them.

The solution of simultaneous linear equations of numbers exceeding twenty or thirty is not an impossible accomplishment today. We may hope that in a few years we may even get to as high a number as one hundred. But it would be erroneous to believe that the equations need merely be fed into an electronic superspeed computer and that what comes out is a meaningful solution which can be accepted *tel quel*. This would be a complete misunderstanding of the deep nature of the undertaking. It will be necessary for those economists proposing such undertakings—and I am among them—to acquaint themselves thoroughly with the logic of computing.³ It would not be advisable to raise hopes that perhaps cannot be fulfilled. In such a situation a rare and happy combination of carefulness and boldness is wanted. I raise my voice in favor of great care.

² Cf. O. Morgenstern, "Demand Theory Reconsidered," *Quarterly Journal of Economics*, February, 1948.

³ Cf. N. Wiener, *Cybernetics* (1948), p. 154: "The use of machines for . . . the solution of twenty or thirty simultaneous equations shows difficulties which do not arise when we study analogous problems of small order . . . these may completely deprive the solution of any significant figures whatever."

PROBLEMS OF THE ITO

THE CHARACTER AND SIGNIFICANCE OF THE GENERAL COMMITMENTS THAT NATIONS WILL MAKE UNDER THE ITO CHARTER

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Introduction

The Charter of the International Trade Organization, which was signed by fifty-three nations at Havana in March, 1948, is certainly the most comprehensive international agreement on foreign trade ever negotiated.¹ Its 106 Articles cover practically every conceivable aspect of international economic relations not previously affected by the Bretton Woods and other international agreements dealing with economic problems. Its full impact, moreover, cannot be weighed without taking into account the General Agreement on Tariffs and Trade signed at Geneva the previous October, under which very substantial tariff reductions were negotiated by twenty-three nations.² Yet the more severe critics of the ITO Charter dismiss it as a collection of escape clauses, while one commentator maintains that the Havana Conference failed to evolve any real collection of international "rules of the game."³

It may be well to point out at the outset that the history of multi-lateral trade negotiations in the interwar period was anything but encouraging. The World Economic Conference of 1927 was held at a time when commercial policy issues were far simpler than those coming before an international conference today. Most of the quantitative trade restrictions which had been in use during World War I had by that time been abolished. Yet the best that the Conference could achieve was a loose agreement which, on the whole, merely succeeded in forestalling for several years a wave of tariff increases which would otherwise have taken place.⁴

¹Technically, it was not the Charter of the ITO that was signed at Havana, but a Final Act of the Conference authenticating the text of the Charter and agreeing to submit it to the governments concerned.

²By October, 1948, twenty-two of the twenty-three countries had put the Agreement into effect.

³Cf. M. A. Heilperin, "Notes on the Havana Trade Charter," *Canadian Banker*, May, 1948, p. 4.

⁴In 1927 there was also negotiated an International Convention for the Abolition of Import and Export Prohibitions and Restrictions. Although originally ratified by nineteen countries, some of the ratifications were contingent on the accession of other countries, and the Convention was finally and unconditionally ratified by only seven countries, which made almost no use of such restrictions. Cf. M. S. Gordon, *Barriers to World Trade* (New York, 1941), pp. 14-15.

During the thirties the history of multilateral economic negotiations was even more disheartening. The failure of the London Economic Conference of 1933 is so well known as scarcely to deserve comment. The only broad attempt to bring about a modification of world trade barriers which was even partially successful during the thirties was the American Trade Agreements Program, which had to rely on the slow process of successive bilateral negotiations with individual countries.

If we are to arrive at a fair evaluation of the ITO Charter, we must avoid the temptation to compare it with an ideal blueprint for world trade or to appraise its contents in one or two sweeping generalizations. Only a sober analysis of all the important provisions will yield any conclusive judgment on its value. In this paper, the general commitments will be discussed as fully as possible in the time available, leaving an analysis of the escapes and exceptions to the two succeeding papers.

Commercial Policy

Of the five broad economic problems covered by the Charter, that of commercial policy is of central importance, since the modification of trade barriers is generally conceived as the primary function of the ITO and it is in the sections on commercial policy that we find the most binding commitments.⁵

1. *Tariff Bargaining and the Elimination of Preferences.* In both the Havana Charter and the Geneva Agreement there has been developed an approach to the problem of multilateral tariff reductions which gives promise of being more successful than anything hitherto attempted in this field. Previous multilateral tariff negotiations have generally broken down over the difficulty of agreeing on a formula for over-all reductions which would be acceptable to both high-tariff and low-tariff countries. In the ITO Charter, no such formula has been sought. On the contrary, reliance is placed on a broadened application of the type of bilateral bargaining which has been successfully employed in the American Trade Agreements Program.

Every member of the ITO is committed to enter into negotiations for tariff reductions at the request of any other member. Such negotiations are to be conducted on a product-by-product basis, but any concessions agreed upon are to be incorporated in a multilateral agreement, i.e., the Geneva Agreement, and the benefits are to be generalized to all members of the ITO. The obligation to negotiate applies also to

⁵ It is probable, moreover, that the success of the ITO will largely depend on its success in achieving the objectives of the commercial policy provisions.

the operations of any state trading enterprises which member countries maintain.⁶

This method has already borne impressive fruit in the Geneva Agreement, which was signed by nations accounting for approximately three-quarters of world trade as of 1938 and which included tariff concessions affecting about 50 per cent of world trade.⁷ Even so, the process of tariff bargaining is not likely to stop with these reductions. The Charter provides that any member of the ITO which does not become a party to the Geneva Agreement within two years after the Charter becomes effective (with respect to such member) may be denied by any other member the benefits of concessions embodied in that Agreement. Thus a country which refuses to enter into negotiations during the prescribed two-year period will face the possibility that its exports may receive discriminatory treatment.⁸

ITO members are obligated to enter into negotiations, not only for tariff reductions, but also for the elimination of tariff preferences. Here again substantial progress has been made under the Geneva Agreement. In addition, no margins of preference may be increased, and all reductions in those most-favored-nation rates which are associated with preferential rates must operate automatically to reduce or eliminate existing margins of preference. Similarly, reductions in preferential rates must be matched by equivalent reductions in the corresponding most-favored-nation rates.⁹ These provisions represent, of course, a major concession on the part of the British Empire. If the Ottawa Agreements may be characterized as a response to the Smoot-Hawley Tariff Act, the decision to turn away from the policy of imperial preference may be interpreted as recognition by the British that the United States definitely intended to pursue in the postwar world the course begun under the Trade Agreements Program.

2. *Quantitative Restrictions.* Important as tariffs are, they become almost completely overshadowed in a country which makes extensive use of direct quantitative trade restrictions or exchange controls. While exchange restrictions come under the jurisdiction of the International Monetary Fund, import quotas come within the province

⁶ In the case of an import monopoly on a given commodity, for example, the margin of protection afforded domestic producers in the country maintaining the monopoly would be treated as a tariff subject to reduction by negotiation. In the case of an export monopoly, the negotiations would seek to modify any competitive advantage afforded domestic users of the commodity or would seek to assure exports of the monopolized product "in adequate quantities at reasonable prices."

⁷ Not all of these concessions represented actual tariff reductions. In some cases, existing rates or the duty-free status of imports were bound against increases.

⁸ In October, 1948, eleven countries which were not parties to the Geneva Agreement indicated their intention of entering into negotiations with the twenty-two countries which have ratified the agreement.

⁹ New preferences may be negotiated only in conjunction with programs of economic development or the formation of customs unions or free trade areas.

of the ITO. Provision is made for close consultation between the two agencies, and various safeguards are set up to ensure that import quotas will not be illegitimately used as a substitute for exchange restrictions or vice versa. Members of the ITO, moreover, must join the Fund or enter into a special exchange agreement with the ITO.

The Havana Charter lays down the general rule that ITO members shall not employ quantitative restrictions on *either* imports from or exports to other members. The exceptions to this rule, however, are so extensive that it is not easy to weigh the significance of the general commitment. The most important exceptions apply to the use of import restrictions in connection with balance-of-payments difficulties, agricultural control schemes, intergovernmental commodity agreements, and programs of economic development. What seems to remain is that import quotas may not be employed in lieu of tariffs purely for the protection of established industries. This may exert an important restraining influence in certain situations, such as that which faced a number of European gold bloc countries in the early thirties, when import quotas were adopted to meet price deflation abroad, even though these countries' monetary reserves were ample. One is tempted to predict, however, that for some years to come countries which might be inclined to resort to import quotas to meet price deflation abroad will also have balance-of-payments difficulties. But there is no certainty that this will continue to be the case indefinitely, and it may well be that in the long run the general prohibition in the Charter will prove to be of considerable practical importance.

3. *Nondiscriminatory Treatment.* When we turn to the problem of discrimination, we find again that the provisions relating to tariff matters are more satisfactory than those relating to quantitative restrictions. All ITO members are committed to apply most-favored-nation treatment to the trade of all other members, save for certain specified existing preferential arrangements, which must be modified by negotiation, and the limited types of new preferential arrangements permitted under the Charter.¹⁰ The fact that most-favored-nation treatment need not be extended to nonmembers of the Organization is worth noting. It means that nations which do not want to undertake the obligations of membership run the risk of encountering discriminatory treatment for their products in most of the world's markets.¹¹

¹⁰ The commitment is broadly phrased to include not only tariffs and other direct or indirect charges on imports but also all fees or charges which might be imposed on the international transfer of payments for imports or exports. As has previously been indicated, however, countries which fail to become parties to the Geneva Agreement within a specified period may be denied the benefits of concessions embodied in that Agreement.

¹¹ Whether this will operate as a strong inducement for nonmembers to join remains

The provisions relating to the nondiscriminatory application of import quotas reflect the difficulties involved in finding a satisfactory solution to this problem. In general, the Charter seeks to ensure that import quotas shall be administered in an equitable and nonsecretive manner, but no single method of achieving this result is prescribed.¹² Another difficulty in the application of the principle of nondiscrimination arises in connection with state trading. The general rule is laid down that state trading enterprises must make their purchases and sales solely in accordance with commercial considerations, such as price, quality, and related factors. The obvious question which comes to mind is whether such a requirement is at all enforceable. Since the Soviet Union and the countries of the Soviet bloc, with the single exception of Czechoslovakia, have not signed the Charter, the real test of the workability of this provision will arise in relation to the more limited government trading monopolies maintained in certain predominantly capitalist countries.

4. *Subsidies.* The Charter also deals with the important matter of government subsidies affecting international trade. A distinction is drawn between actual export subsidies and domestic subsidies which may incidentally stimulate exports. Subsidies of the latter type must be reported to the Organization,¹³ while actual export subsidies are prohibited, although the prohibition is not to become effective until two years after the Charter enters into force.¹⁴ The prohibition does not extend, moreover, to export subsidies on primary commodities under certain conditions, including those involving particular types of price-stabilization schemes.¹⁵ Significantly enough, during the inter-

to be seen. Conceivably, members may hesitate to deny most-favored-nation treatment to nonmembers for fear of retaliation. On the other hand, the denial of such treatment to nonmembers may come to be the established practice, in which case nonmembers will be at a decided disadvantage in international competition.

¹² Probably the best solution would be for the country imposing the restriction to make public the total amount of the quota and to issue licenses to importers specifying the amounts which each importer could bring in but leaving him free to determine the geographical sources of his imports. Actually, the Charter permits a number of alternative methods, ranging from the straight global quota to a system under which the quota is allocated among supplying member countries in accordance with the shares supplied by such countries in a previous representative period. Certain exceptions to these general provisions are permitted, not only during the transition period, but in any situation involving balance-of-payments difficulties.

The provisions for nondiscriminatory treatment apply also to export quotas.

¹³ Members are obligated to enter into discussions with other members or with the Organization, upon request, with a view to limiting this type of subsidy.

¹⁴ Export subsidies may be continued beyond this date only if specific extension of the period of grace is granted by the ITO.

¹⁵ A member may not employ such subsidies so as to acquire for itself more than an equitable share of world trade in the commodity in question. Here, as in the case of import quotas on agricultural products, the U. S. Government played a conspicuous role in pressing for the exemption. The Charter does not even require that export subsidies on primary commodities shall be abandoned if the product becomes subject to an international commodity control agreement, although it is apparently contemplated

war period, export subsidies were used most extensively in connection with agricultural commodities.¹⁶ Thus the subsidy provisions of the Charter will be of value chiefly to forestall any possible subsidization of industrial exports and to prevent an overly aggressive use of export subsidies on primary commodities.

5. *Other Commercial Policy Provisions.* Time will not permit a full discussion of the remaining commercial policy provisions, relating to such matters as antidumping duties, customs valuation procedures, internal taxation of foreign products, and the like. Suffice it to say that these provisions taken together represent a comprehensive and fairly satisfactory international code for preventing arbitrary, burdensome, and discriminatory restrictions on foreign trade.¹⁷

Restrictive Business Practices

Even though governmental trade restrictions were reduced to a minimum, trade in industrial products would still be seriously restricted in many instances through the operations of private business agreements and international cartels.¹⁸ There were two main ways in which this problem might have been attacked: (1) through seeking to outlaw certain practices, as under the Sherman Antitrust Act, or (2) through recognition of the fact that the concentration of industrial power is inevitable and that the best approach is some form of government regulation. It is the former approach which is embodied in the Charter, and while many economists would argue that the philosophy of the Sherman Antitrust Act is outmoded, it must be conceded that the development of satisfactory alternatives remains one of the great unsolved problems of economic policy.

ITO members are committed to take "appropriate measures," in co-operation with the Organization, to prevent restrictive business practices affecting international trade. Complaints may be submitted to the Organization, which may investigate and recommend remedial action to the members concerned, requesting reports on the action

that in most cases the need for subsidies would disappear if such an agreement were concluded. For a more extended discussion of this problem, see my article, "International Aspects of American Agricultural Policy," *American Economic Review*, 1946, pp. 601-607.

The prohibition on export subsidies also does not extend to a case in which a member subsidizes its exports of a product to offset a subsidy granted by a nonmember.

¹⁶ Germany was the only country in which the government directly subsidized industrial exports to any appreciable extent, although there were, of course, many cases of exchange dumping and of private dumping.

¹⁷ Many of these matters have customarily been covered by commercial treaties, but the process of negotiating such treaties was slow and cumbersome, and some of the practices of individual countries remained quite unsatisfactory in spite of the efforts of other countries to negotiate for changes.

¹⁸ While the existence of governmental trade restrictions facilitates the enforcement of private cartel agreements in many instances, it does not follow that the modification of governmental trade barriers would lead to the dissolution of cartels.

taken in any particular case. Certain practices are designated as subjects to investigation, including price fixing, allocation of markets, restriction of production, and the like.¹⁹ Member countries must take all possible steps by legislation or other means to prevent such practices affecting international trade within their jurisdictions.

There will undoubtedly be wide variation in the effectiveness of the measures adopted by individual ITO members to implement these provisions, especially in view of the marked contrast in attitude toward cartels in Europe and the United States. It is unfortunate, moreover, that the Charter does not include certain additional requirements, such as a provision that every member country should require the registration by its nationals of the terms of all international business agreements to which they are a party.²⁰ Nevertheless, the power of the ITO to conduct investigations may not only exercise a restraining influence on monopolistic practices but also lead to the accumulation of a body of information which may eventually form the basis of a more effective system of international regulation. Here, as in the case of so many of the Charter's provisions, much will depend on the manner in which the powers of the ITO are administered.

Intergovernmental Commodity Agreements

While the Charter frowns on international cartels, it recognizes that under certain circumstances intergovernmental commodity agreements may be necessary. It seeks, however, to ensure that such arrangements will be transitional in character, limited to special types of situations, and not excessively unfair to consumers. The Organization may set up commodity study groups to explore all the possible ways of dealing with particular maladjustments or may call commodity conferences of a more formal type.²¹

Members are committed not to enter into commodity agreements which do not conform to certain definite criteria. All agreements must be open to all members on equal terms and must provide for equitable treatment as between participating and nonparticipating members.²² In addition, there are special requirements which apply only to commodity *control* agreements, involving regulation of production, trade, or prices. Members must not enter into commodity control agreements

¹⁹ Such practices are to be prevented, whether they are the subject of a cartel agreement or are engaged in by a single combine or monopoly. The Organization is also empowered to conduct studies and arrange conferences relating to this whole range of problems.

²⁰ Cf. E. S. Mason, *Controlling World Trade* (New York, 1946), pp. 5, 63.

²¹ Such study groups or conferences may be suggested by individual members, must be open to all members with a substantial interest in the commodity, and may also include representatives of such nonmembers as may be invited.

²² They must also provide for full publicity and for adequate participation of importing countries, while nonmembers may be invited to participate.

unless there is a serious disequilibrium between demand and supply which cannot be corrected by normal market forces in time to prevent serious hardship either to large groups of producers or to substantial numbers of workers.²³ Importing countries must have a total voting power equal to that of exporting countries. The agreements must ensure increasing opportunities for satisfying requirements from the most "effective" sources, and participating countries must adopt domestic programs designed to eliminate or reduce the underlying maladjustments.²⁴ While limited to an initial period of five years, agreements may be renewed for further five-year periods.

The extremely cautious attitude displayed toward commodity agreements in the original American *Proposals* has been somewhat modified in the final version of the ITO Charter. Renewal of an agreement, for example, is no longer contingent upon substantial progress having been made toward "solution of the underlying problem."²⁵ While such a provision might not be workable, its original inclusion did serve to point up the major problem which the ITO will have to face in this field—whether fundamental readjustments, involving shifts of productive resources, *can* be brought about within the framework of a program of commodity control agreements.²⁶ There is some question, furthermore, as to whether the provision for equal representation of importing countries will ensure adequate protection against excessively high prices, for the interests of importing countries are not necessarily identical with those of consumers.²⁷

Employment and Economic Activity

I shall deal very briefly with the so-called "full employment" provisions of the Charter, for in my opinion they include no commitments which are specific enough to be binding in any sense. Each member is obligated to "take action designed to achieve and maintain full and

²³ The conditions are so defined in the Charter as to confine agreements of this type to certain agricultural staples and a few minerals. Cf. Clair Wilcox, *A Charter for World Trade* (New York, 1949), pp. 122-123.

²⁴ The agreements must also be designed to assure adequate supplies at all times at prices which are both fair to consumers and provide a reasonable return to producers.

²⁵ The original proposals provided that such progress must have been made or that the renewed agreement must contain revisions designed to facilitate such progress. They also called for investigation by a study group of the "root causes" of the problem before any agreement could be concluded. U. S. Department of State, *Proposals for Expansion of World Trade and Employment* (Washington, 1945), p. 22.

²⁶ Certainly such agreements have in the past tended to protect the position of high-cost producers. Production shifts will be difficult to carry out in the United States unless our agricultural price-support policy is modified in the direction of greater flexibility.

²⁷ Cf. Gordon, *loc. cit.*, pp. 607-608. The fact that commodity agreements are to be administered by an Organization which is concerned primarily with the reduction of trade barriers should, however, encourage the protection of consumers. From this point of view, achievement by the FAO of its apparent aim of acquiring more power over commodity agreements than is now granted to it under the ITO Charter would be highly unfortunate, since it is quite apparent that the point of view of agricultural producers is more heavily represented in the FAO than is likely to be the case under the ITO.

productive employment and large and steadily growing demand within its own territory through measures appropriate to its political, economic and social institutions." One need only recall the debates in this country over the Employment Act of 1946 to appreciate how much fundamental disagreement exists over what policies are designed either to achieve full employment or to conform to any particular set of political or economic institutions.²⁸ The problem of achieving co-ordinated international action toward full employment and economic stability remains one of the most challenging problems in the field of international economic relations, but little can be accomplished in this direction until the strongest economic nation in the world grants its government somewhat fuller powers to pursue the objective of domestic economic stability.

Economic Development and Reconstruction

The section of the Charter relating to economic development and reconstruction was not contemplated in the original American *Proposals* but was added later, largely to satisfy the demands of underindustrialized countries for freedom to protect their infant industries. It contains a number of constructive and useful general commitments, as well as some dangerous exceptions. ITO members must co-operate in providing technical and financial assistance to other members within the "limits of their power." They also agree not to take "unreasonable or unjustifiable action" injurious to the rights of other members which have supplied capital or technical assistance²⁹ and to enter into consultations, at the request of any other member, directed toward the conclusion of "bilateral or multilateral agreements relating to . . . opportunities and security for investment." This latter provision should be particularly useful if it results in a more precise formulation, as between individual lending and borrowing countries, of the general principles set forth in this part of the Charter.

The Powers of the ITO

This discussion would not be complete without some brief consideration of the enforcement provisions of the Charter. In general, the powers of the ITO are limited to collecting information, carrying

²⁸ The section on Employment and Economic Activity also provides that a member with a persistently heavy export balance must make its "full contribution" toward correcting a situation in which other members are suffering from balance-of-payments difficulties. This is obviously intended to mean that "Uncle Sam" must not act like "Uncle Shylock" but again is so vague as scarcely to involve a binding commitment. Countries suffering from balance-of-payments difficulties must also take "appropriate action" to correct the situation. In addition, there are some useful provisions calling for studies and consultation on problems of employment and economic activity, as well as for co-operation with the ILO.

²⁹ Such a provision would have specific application to a case such as the Mexican expropriation of foreign oil properties.

out studies or investigations, calling conferences, and making recommendations.³⁰ Although a detailed procedure is set up for handling complaints, the Organization cannot compel any member to comply with its recommendations. If, however, it considers that a provision of the Charter is being nullified or impaired by action of a member, it may release another member or members from obligations or concessions considered equivalent to the injury to their interests. This power should have an important effect in preventing members from violating the Charter's provisions. It must also be recognized that while the permissive withdrawal of concessions unfortunately constitutes a form of retaliation, the procedures to be followed under the Charter should prevent retaliatory measures which are out of proportion to the original injury.³¹

Conclusions

In forming a judgment on the general commitments in the Charter, we must recognize that the topics covered range all the way from problems like tariffs and customs formalities, which have been the subject of international negotiations for centuries, to problems like state trading and international cartels, which must be approached in a frankly experimental manner. The results reflect these differences. The provisions relating to tariffs and preferences represent a notable achievement. The sections on restrictive business practices, commodity agreements, and employment and economic activity, on the other hand, represent in varying degrees the breaking of new ground so far as international economic co-operation is concerned.

The most serious question mark in relation to the entire Charter, in my opinion, concerns the loopholes regarding the application of quantitative import restrictions, particularly to meet balance-of-payments difficulties. Continued widespread use of import quotas (and/or exchange restrictions) will render valueless many of the tariff concessions which have been concluded or may be negotiated in the future. This is a problem which will test the strength of both the ITO and the Fund, and its solution will clearly depend on the extent to which the world's leading democracies can achieve economic stabilization.³²

³⁰ In some instances, prior approval of the Organization is required before members may take advantage of escapes and exceptions permitted under the Charter.

³¹ Cf. Robert P. Terrill, "Strategic Problems in World Trade and Measures Taken to Meet Them," *Foreign Commerce Weekly*, October 30, 1948, p. 47. It should also be pointed out that the Charter includes provisions under which the Organization or one of its members may seek an advisory opinion from the International Court of Justice. The Organization must consider itself bound by the Court's opinion on any question referred by it to the Court.

³² It is likely that the ITO Charter would have turned out to be a much stronger

On the whole, the ITO Charter seems more thoroughly acceptable if it is regarded as a first and somewhat experimental step toward the development of a comprehensive code to govern international trade relations rather than as a final and unchangeable document. Fortunately, there is a requirement for a general review of the Charter's provisions five years after it becomes effective. It is to be hoped that during those five years the Organization will take every advantage of opportunities to build up information and experience which will form the basis for constructive amendments and possibly for the elimination of some of the more dangerous escape clauses.

document in many respects if the United States had shown a greater determination to grapple with the problem of domestic economic stabilization in the early postwar years. Certainly the balance-of-payments problems of the nations of Western Europe would be far less acute today if the postwar rise in American prices had been held in check.

SHORT-RUN ESCAPE CLAUSES OF THE HAVANA CHARTER¹

By J. HERBERT FURTH

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The Charter lays down the general rules that no member shall prohibit or restrict foreign trade with other members except by means of tariff duties or similar charges, and that no prohibition or restriction shall be applied in relation to any member unless it is similarly applied in relation to all other countries.

These rules are subject to so many exceptions that it may seem at first glance as if nothing remained of their substance. In the following paper I shall try to show, however, that most exceptions can be interpreted as embodying a small number of well-defined theoretical ideas. These ideas are neither those of radical collectivism—which is inconsistent with the very purpose of the Charter—nor those of radical individualism—which does not permit any deviation from free trade; but rather those of an intermediate philosophy which accepts the market-price mechanism as the general method, and admits government interference as an exceptional method, of maximizing national income and distributing its shares.

I

Import restrictions in general may aim: at reducing the total volume of imports, e.g., for the sake of preserving monetary reserves; or at changing the composition of imports without reducing their total volume, e.g., in order to promote the importation of "necessities" instead of "luxuries" or of producers' instead of consumers' goods; or at reducing imports of specific commodities, e.g., for the sake of protecting domestic industry.

The preservation of monetary reserves may be necessary, not so much for protecting the "basis" of the domestic currency system, but rather for maintaining flexibility in financing a future import surplus. A country without reserves (or foreign credits) has to curtail its imports whenever its exports decline and cannot increase imports without expanding its exports. A country that avoids a fall in reserves (or an exhaustion of foreign credits) by restricting imports decides to forego present in favor of potential future imports.

The market-price mechanism does not necessarily provide an optimum solution for the allocation of reserves between present and future imports. In contrast to the capital market where, in theory at least,

¹ The author wishes to thank Miss Gertrude Lovasy and Messrs. Ervin Hexner, Randall Hinshaw, and Robert Solomon for their valuable comments.

the interest rate may equilibrate the demand for present and future goods, there is no competitive bidding between those who prefer present and those who prefer future imports. The government may therefore be as good an agency as any other to weigh the allocation of monetary reserves between present and future use.

A change in the composition of imports may be necessary for countries whose resources have been depleted so severely that the maintenance of free consumers' choice would endanger the subsistence of low-income groups or hamper the capital formation needed for reconstructing the system of production. The protection of specific industries may be necessary in the case of inflexibilities which preclude an immediate shift of resources to a more advantageous use.

Among import restrictions, quantitative controls are in general more harmful than tariff duties because they tend to disrupt the market-price mechanism by facilitating discrimination, by creating windfall profits and thereby inviting corruption, and especially by ossifying the economy. Quantitative restrictions, in contrast to tariff barriers, cannot be overcome by foreign competitors' lowering the price or improving the quality of their products. This very fact, however, may make quantitative restrictions preferable in the case of temporary emergencies when an immediate and unqualified restriction of imports may be needed to avoid a drain of reserves or the breakdown of a particular industry. In that case, it might be too time consuming to prepare an appropriate tariff schedule, and the possibility of foreign producers overcoming the barrier by price or quality changes might defeat the purpose of the measure. If the restrictions were of short duration, there would be little danger of ossification. In such emergency cases, quantitative restrictions may therefore be considered appropriate, provided that discrimination and windfall profits are avoided.

II

The Charter provisions that deal with the use of quantitative restrictions for the purpose of conserving monetary reserves conform generally to our theoretical scheme. They aim at limiting such use to temporary emergencies and at avoiding discriminatory application. They do not try, however, to eliminate windfall profits; e.g., by requiring the allotment of quotas or licenses to the highest bidder.

Article 21 permits a member to use quantitative import restrictions "in order to safeguard its external financial position and balance of payments" to the extent necessary to forestall the imminent threat of a serious decline or, in the case of a member with very low reserves, to achieve a reasonable rate of increase in its monetary reserves. The

members are under obligation to relax and ultimately eliminate restrictions as their external financial position improves and to avoid unnecessary damage to the interests of other members. During the period of postwar transition, the Organization has, however, "to take full account of the difficulties of post-war adjustment and of the need which a member may have to use import restrictions as a step toward the restoration of equilibrium in its balance of payments on a sound and lasting basis." Moreover, no member shall be required to withdraw or modify restrictions on the ground that a change in its domestic policies relating to reconstruction, development, or full employment would render the restrictions unnecessary. Finally, any member may apply the restrictions in such a way as to give priority to the imports of those products which are more essential in the light of its domestic policies.

The last provision conforms to the theoretical scheme. The obligation imposed upon the Organization, however, to consider transition difficulties and domestic economic policies as valid reasons for the continuation of import restrictions, may rob the rest of the Article of most of its effectiveness. Most countries are suffering from transition difficulties and will continue for an indefinite period to do so unless they adopt corrective domestic economic policies. Equally, most countries will encounter balance-of-payments difficulties as long as they find it necessary to maintain a level of consumption higher than their use of available factors of production would permit. All provisions aimed at confining quantitative controls to temporary emergencies may become ineffective if the members are permitted to prolong the emergency forever through the adoption of disequilibrating domestic policies.

The provisions concerning domestic policies are thus theoretically objectionable, but it must be admitted that in practice the Organization probably would be unable in any case to force members to change their domestic policies. The provisions, therefore, may be defended as recognizing the political facts of life. Moreover, the members are under obligation to carry out their domestic policies with due regard to the need for restoring equilibrium in their balance of payments on a sound and lasting basis. Thus, while the Organization cannot interfere with a member's domestic policies as such, it can question the manner in which these policies are carried out.

Any member that is considering the introduction of restrictive measures under Article 21 has to consult with the Organization, either before or immediately after instituting them. The previous concurrence of the Organization is not required, and any member is thus initially the sole judge of the existence of conditions justifying the application

of such measures. The Organization, however, may at any time ask a member to enter into consultations about the application of these restrictions, and within two years after the Charter's coming into force will review all restrictions still applied at that date. Furthermore, any member that feels aggrieved by another member's restrictions may bring the matter to the Organization for discussion. If the Organization determines that the restrictions are applied contrary to the Charter provisions, it will recommend their withdrawal or modification.

In these consultations and discussions the Organization probably will play its most important role. It will not merely consider the acts of the members in the light of the legal meaning of the Charter provisions but review the underlying economic situation and suggest alternative measures that would better conform to the spirit of the Havana agreement. If the Charter contained no provisions except those that make these consultations and discussions mandatory, it could be expected to contribute substantially to the restoration of sanity in international economic relations.

III

Discriminatory import restrictions may serve to maximize real income if they avert a mutual contraction of foreign trade and if they counteract distorting effects of currency inconvertibility.

The first case, which is similar to that of avoiding a deflationary spiral in a contracting domestic economy, has been widely discussed in connection with the recent work of Professor Ragnar Frisch.

The essence of Professor Frisch's theory may be summarized in the following example: Assume three countries, A, B, and C, country A exporting, say, 12 units to country B without importing anything from that country, and country C importing from and exporting to both A and B, say, 120 units each, with demand (and supply) elasticities for the transactions assumed for simplicity's sake to be equal in all countries. Assume further that country B has to eliminate its import surplus of 12 and that neither B nor C is able to expand its exports. International trade would contract least if B eliminated all imports from A. Without discrimination, however, it can be shown that equilibrium will eventually be restored only when B has reduced its imports from A by 2 and its imports from C by 20, while C has reduced its imports from A and B by 10 each. Instead of a reduction of total foreign trade by 12, there will be one by 42 units.

This does not mean, however, that economic conditions in all three countries would be worse than if B had merely eliminated its imports from A. According to the basic theorem of utility analysis, B may in fact be better off by eliminating marginal imports of 20 from C

rather than intramarginal imports of 10 from A. Country A's position will be neither better nor worse; in both cases it loses its export surplus of 12 but none of its imports. Country C, however, will be worse off; if country B had eliminated only its imports from A, country C would not have been touched at all, while actually it loses imports and exports of 20 each. With the present tools of economic analysis, it is impossible to decide whether the possible advantage accruing to country B will be larger than, equal to, or smaller than the disadvantage suffered by country C.

Both countries B and C, however, are harmed by the mutual contraction in their foreign trade by 10 units. This mutual contraction may be called the "Frisch-effect." If countries B and C could eliminate that mutual contraction, international economic equilibrium would not be disturbed, country A would not be affected, and both countries B and C would profit. To that end it would be necessary that the countries that have to restrict imports (in our case B and C) avoid a contraction in relation to any other country insofar as that other country would have to shift the resulting deficit back to the original country.

In the case of more than three countries, the situation would become rather complicated; secondary and tertiary shifts in the reduction of imports also would fall in part upon countries able to absorb them because of their good international financial position and in part upon countries that would have to retaliate because of their tight position. Moreover, demand and supply elasticities probably would show substantial variations. Forecasting the eventual distribution of the burden of import contractions would therefore become extremely difficult and uncertain. Finally, the condition that an increase in exports from the deficit countries be treated as impossible severely restricts the practical significance of the analysis.

The second case for discrimination is connected with the inconvertibility of currencies subject to exchange controls. The limited acceptability of inconvertible currencies tends to hamper exports from and to spur imports into the countries using currency controls as long as the central banking authorities of free-currency countries agree to exchange the controlled currencies at arbitrarily fixed rates in payment of exports and imports. In that case, these central banks tend to accumulate balances of inconvertible currencies that are useless except for expenditures within the country of issue. Free-currency countries may therefore benefit from measures aimed at avoiding such an accumulation by discriminating either against exports to or in favor of imports from countries using inconvertible currencies. It would indeed conform better to the principles of the market-price

méchanism if central banks declined to trade in foreign currencies at arbitrarily fixed rates. International obligations, however, and especially the policy of the International Monetary Fund, may make such a trade inevitable. In that case, discriminatory measures may restore the flow of imports and exports to the pattern that would obtain in a free economy at equilibrium exchange rates.

IV

The Charter provisions permitting discriminatory practices are mainly concerned with the problem of inconvertibility, but some clauses may be interpreted as dealing with the Frisch-effect.

During the postwar transition period, Article 23, paragraph 1, permits discrimination in two different ways. The first, open only to a few original signatories of the Geneva General Agreement on Tariffs and Trade of October 30, 1947, is embodied in Annex K. Under this provision, a member may relax existing restrictions in a discriminatory way, provided that such a method increases the flow of imports, does not involve the payment of excessive prices or a reduction in the member's receipts of gold and convertible currencies, and does not cause unnecessary damage to other members. These three provisions are characteristics of the elimination of the Frisch-effect.

Most members of the Organization, however, are barred from that so-called "Geneva option" and can only apply the provisions of Article 23, paragraph 1 (b) and (c). They may continue to apply any discrimination to safeguard their balance of payments which they actually applied on March 1, 1948; moreover, they may apply discriminatory measures that "have equivalent effect to restrictions on payments" which are permitted under Article XIV of the International Monetary Fund agreement. This Article permits any member to maintain restrictions on payments notwithstanding the general rule of Article VIII of the Fund agreement, provided it has notified the Fund and subject to certain reporting and reviewing powers of the Fund; in addition, members whose territories were occupied by the enemy during the war are permitted to introduce new restrictions. This so-called "Havana option," adopted at the insistence of some European nations, goes far beyond the provisions of the Geneva option and virtually suspends for the time being the antidiscriminatory provisions of the Charter for most member nations.

The freedom to use Article 23, paragraph 1, is limited by the provision that such discriminatory practices are to promote the maximum development of multilateral trade and to "expedite the attainment of a balance-of-payments position which will no longer

require resort" to the "escape clauses." From March, 1950, on, the Organization will report on these discriminatory practices; and from March, 1952, on, any member wishing to continue such practices will have to consult with the Organization. These provisions give the Organization the same power which the Fund has under Article XIV of the Fund agreement. Moreover, the right to take action under Article 23, paragraph 1, expires for any member as soon as it ceases to avail itself of the provisions of Article XIV of the Fund agreement. Any member is thus prevented from using discriminatory trade practices after it has lost the right to use discriminatory currency practices. It is doubtful, however, whether this clause actually will shorten the period during which members will apply discriminatory measures in trade, or on the contrary tend to lengthen the period during which members will cling to Article XIV of the Fund agreement and reserve the right to discriminate both in trade and exchange controls.

Aside from these postwar transition clauses, the Charter seems to grant a minor recognition to the Frisch-effect in Article 23, paragraph 2, which permits the discriminatory application of quantitative import restrictions in the case of temporary deviations affecting only a small part of a member's foreign trade where the benefits to the members concerned outweigh substantially any injury to other members. From the point of view of theory, this exception seems to limit rather severely the possibilities of counteracting the Frisch-effect. In view of the practical difficulties in assessing that effect, however, the limitations appear justified.

The use of discriminatory practices to counteract distorting effects of inconvertibility is permitted in Article 23, paragraphs 4 and 5 (a). Members may apply quantitative restrictions in such a way as to increase their earnings of convertible currencies, and they may apply restrictions "having equivalent effect to exchange restrictions" authorized under the "scarce-currency" clause (Article VII, Section 3 b) of the Fund agreement. This clause permits members to discriminate against imports from countries whose currencies have been declared scarce. Both exceptions conform to our theoretical scheme. They indicate that the main forum where the battle against discrimination has to be fought will be the International Monetary Fund rather than the International Trade Organization.

The close connection between restrictions on exchange and on trade also is recognized in Article 24, paragraph 4, which prohibits members from frustrating the intent of the Charter section dealing with quantitative restrictions by exchange actions and from frustrating the intent of the Fund agreement by trade actions. If the Organization considers that an exchange restriction applied by a member contravenes the

intent of the Charter section on trade restrictions, it will report to the Fund (paragraph 5). If the Fund considers the exchange restriction to be in accordance with the Fund agreement, the member remains entitled to use it. Moreover, a member is entitled to use trade restrictions contrary to the Charter provisions if their sole effect is to make effective exchange restrictions permitted under the Fund agreement (paragraph 8). The provision of paragraph 4 therefore seems to need modification in the sense that an action permitted under the Fund agreement never can be considered a violation of the Charter. On the other hand, an action apparently permitted under the Charter may conceivably be considered forbidden as violating the intent of the Fund agreement. Proper co-ordination in the policies of the Organization and the Fund, however, probably will prevent that slight divergency from becoming significant in practice.

V

Despite the wide range of the escape clauses, quantitative and discriminatory practices appear to be completely outlawed in a number of important cases in which their use has been advocated by opponents of free international trade.

None of the escape clauses allows members to use quantitative or discriminatory restrictions merely for purposes of exerting monopolistic powers. If a member is entitled, however, to apply restrictions for other reasons, such as the preservation of monetary reserves, it may be very difficult to prevent it from using its monopolistic powers in the actual application of those measures.

Protection against the allegedly overwhelming power of another country also remains unrecognized as an excuse for quantitative or discriminatory controls. If one country, however, really were able to out-compete another one in such a uniform manner that the mechanism of comparative advantage could not come into play, such one-sided trade could be brought to an end as soon as the drain on the monetary reserves of the threatened country would permit the use of the escape clauses of Article 21.

Neither is a country entitled to use quantitative or discriminatory measures merely in order to protect its planned economy against fluctuations of another country's free economy. Protection of a planned economy has no greater dignity than any other protection of the *status quo* and may just as easily lead to ossification. Moreover, if a free economy suffering from a depression engages in excessively expanding exports of certain products, the planning country may take the measures necessary to avoid disastrous effects upon its economy under Article 40. To whittle down imports in advance merely for the purpose of not

exposing the planned economy to the periodic fluctuations of the free economy would seem to resemble the neurotic fear of a person, who, in perfect health, takes to bed in order to be prepared for a sudden illness.

Finally, the Charter does not permit a country to use quantitative or discriminatory restrictions in retaliation for similar measures enacted by other countries. Reportedly, Switzerland has refused to ratify the Charter because of that omission. It is true that the omission to some extent weakens the position of free-trade countries. This result is inevitable, however, if an infringement of the principles of the Charter by one country is not to lead to a chain reaction which would multiply the forbidden restrictions instead of eliminating them. The Charter therefore rightly confines aggrieved countries to measures of retaliation within the framework of mutual concessions, tariff duties, and similar methods.

It is not the power of economic sanctions that will keep the members of the Organization from abusing the escape clauses. Quite apart from all Charter provisions, a country applying measures of commercial policy harmful to other nations has to be prepared for retaliation; it decides to apply them only if it believes that the beneficial results will outweigh the detrimental. Similar calculations may well enable a country to violate the Charter provisions with relative impunity. The limits of the escape clauses will be observed only if the public, including the economic theorists and practitioners, realize that the principles of the Charter are the best foundation of world prosperity and world peace.

PERMANENT EXCEPTIONS TO THE COMMERCIAL POLICY PROVISIONS OF THE ITO CHARTER

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I

This paper deals with "permanent" permissive exceptions to the commercial policy undertakings embodied in the Charter. The distinction between temporary and permanent exceptions is related to the basis of validation for the "deviationist" behavior permitted by the particular escape clause. If the clause becomes operative upon the entry into force of the Charter commitments and its validity terminates either upon the expiration of some specified time-period or upon the realization of certain defined factual circumstances, it is considered to embody a temporary exception. If, however, the escape clause becomes operative *whenever* certain conditions obtain (which conditions are in each case defined in the Charter precisely and in detail), it is considered to embody a permanent exception.

At the outset it should be noted that the permanent or long-run exceptions herein described are, trivia aside, the *only* such exceptions. This list is exhaustive; not representative. The escape clauses may be of determinative importance in relation to the total operational worth of the Charter—that is a question of qualitative appraisal upon which, it is hoped, this whole group of papers will shed light—but they are not inordinately numerous. The only permanent exceptions not discussed in this paper are either trivial (e.g., the blanket exemption of national measures relating to products of prison labor) or obvious, sensible, and necessary (e.g., the exception for frontier traffic and all similar provisions taken over almost verbatim from standard commercial treaty practice) or both.

The permanent exceptions can be classified under the four following headings: national security; agricultural policy; economic development; and regional preferences.

II

The exceptions relating to national security need not detain us. Indeed they might properly be considered to fall in the category of "obvious, sensible, and necessary" routine exceptions. There is no blanket escape clause which would permit any extensive discretionary abandonment of liberal commercial policies in the name of national security. There are blanket exemptions of: (1) military procurement contracts, (2) actions taken during war or international emergency,

(3) actions and policies relating to fissionable materials and to arms traffic; and of course all obligations to disclose information are qualified by each member nation's absolute right to determine whether such disclosure would be contrary to essential security interests.

III

In the matter of agricultural policy, the architects of the Charter were from the outset compelled to accept certain propositions as given and immutable: (1) that unilateral national price-stabilization and buffer-stock schemes (agricultural price and/or income support programs) would be extensively employed, particularly by the United States; (2) that such schemes would probably have the effect, directly or indirectly, of promoting the export or discouraging the import of such price-supported commodities; (3) that solicitude for the successful functioning of such schemes would from time to time induce governments to subsidize the export or restrict the import of the commodities in question; (4) that, with respect to primary commodities, failure to achieve a reasonable intergovernmental commodity agreement might induce individual nations to take unilateral action (presumably of a subsidy character) to protect their supposed "fair share" of world export markets; and (5) that concurrent effort by two or more nations to protect their respective "fair shares" could easily incite suspicion and provoke "retaliatory" action.

With these premises postulated, it was almost inevitable that the Charter would emerge from the negotiatory process with a complex set of provisions the net effect of which may be summarized as follows:

1. Quantitative import restrictions are permissible when their purpose and effect is to ensure the enforcement of national measures designed to limit the domestic production or liquidate temporary surpluses of any agricultural or fisheries product.

2. Domestic subsidies are permissible per se; but are required to be notified in writing to the Organization if they have any direct or indirect effect on exports or imports; and are subject to mandatory consultation if any other member nation considers its interests to be seriously prejudiced or threatened. The written notification must include an analysis of the foreign trade effects of the subsidy and a justification of its necessity.

3. Subsidies, however, which involve demonstrable export dumping are prohibited; but remission, on exports, of internal excise taxes is not considered to constitute dumping.

4. As regards primary commodities, periodic export dumping is permitted if the recurrent periods when the domestic price exceeds the export price tend to be offset by other periods when the opposite

price relationship obtains and if (partly in consequence) the net effect of the whole arrangement on external trade is negligible.

5. Conflicts of national interest over export subsidies on primary commodities are to be resolved, if possible, by the negotiation of suitable intergovernmental commodity agreements for each such commodity in question. If this proves impossible or inappropriate, nations granting such subsidies are admonished not to seek thereby more than an "equitable share" of world trade in the commodity involved; and are required, on request, to consult with other nations that consider themselves adversely affected by the subsidy. If disagreement still persists the Organization is required to determine what is an equitable share of world trade in that commodity for the subsidizing nation and the latter shall conform to this determination. The Charter prescribes no criteria to govern the individual nation's determination of what constitutes, for it, an equitable share of world trade; but it does suggest a non-exhaustive list of considerations to guide the Organization in its determination of this matter.

IV

It is difficult to keep entirely separate those exceptions related to "economic development" and those related to new preferential agreements. As the text of the Charter recognizes, a preference arrangement may be sought for the purpose of furthering the economic development of the nations which become parties thereto; and in certain circumstances an identical nondiscriminatory (but restrictive) measure or group of measures may be adopted *either* for the furtherance of economic development *or* to facilitate the establishment of a new preference agreement. To the extent possible, this section will deal only with those exceptions permitted out of deference to the preoccupation of nations with problems of economic development.

The Charter language consistently alludes to economic development *or reconstruction*. This linking of the two concepts occurs at least eight times in Article 13 alone; and it is curious, since a *prima facie* case could be made for the probability that the bulk of reconstruction (as that term is commonly understood) could be accomplished during the period when import restrictions would be widely permissible anyway under the balance-of-payments temporary exceptions, so that no special permanent exception would appear to be urgently needed for the exigencies of national reconstruction programs. In any case an analysis of the probable time factor suggests that the permissive exceptions related to development and reconstruction are much more likely to be used for the former than for the latter purpose. Furthermore, while the Charter language associates the concept of economic

development with the establishment of any industry or branch of agriculture, and while the permissive exceptions here under consideration might conceivably be invoked in connection with either particular crop innovations or general programs of land reclamation and agricultural reorganization, it seems on the whole (and considering the total context in which these matters were discussed at Geneva and Havana) much more probable that the application of these permissive exceptions will in practice be pretty much limited to cases of what is generally called industrialization.

Thus the "economic development" exceptions come down in practice to a recognition that the ambition of nations to develop new industries is a legitimate one and justifies resort to whatever restrictive measures (tariff, quota, etc.) may appear necessary to nurse such industries through the period of their infancy, provided those measures do not intolerably prejudice the established trading interests of other nations. This is, I think, the basic philosophy of the economic development provisions. It is, of course, a vague basic doctrine since there is no generalized and objective way in which to determine what constitutes intolerable prejudice to the interests of another country. The Charter text provides a complicated procedural mechanism for approximating this determination; it will be discussed presently. For the moment, attention should be directed to the basic irrationality of a presumption that the establishment of factories automatically justifies restraints upon trade. Such a presumption, at worst, involves an abandonment of all sane belief in the gains from regional and functional specialization; and at best postulates a further (and quite unfounded) presumption that any industry which happens in point of fact to get established at the instance of or with the encouragement of some national political authority is *ipso facto* likely in time to become efficient and self-sustaining.

The Charter, then, accepts the general idea that trade restraints adopted for the protection and promotion of new industries are acceptable in principle, provided it proves possible to avoid undue detriment to the economic interests of other nations. The Charter addresses itself to the task of identifying undue detriment by postulating three types of cases.

1. The trade restraint proposed to be adopted may be consonant with all the general commercial policy undertakings of the Charter but may nevertheless violate a contractual commitment undertaken by the "industrializing" nation pursuant to its obligation (under Article 17 P. 1) to negotiate with other nations for the reciprocal reduction of trade barriers (e.g., it may be proposed to institute a new and highly protective duty on a commodity which had, by negotiation,

been bound on the free list). In such a case the Charter contemplates that the issue should be resolved by negotiation between the "industrializing" nation and other nations and that the projected restraint should become permissible subject to whatever limitations might be mutually agreed upon in the course of negotiations. The negotiations would be conducted either directly among the nations whose contractual relations are involved or under the auspices of the Organization and among the nations who are considered to be most materially affected by the proposed restraint.

2. The proposed trade restraint may violate the general commercial policy provisions of the Charter without violating any specific contractual commitment undertaken pursuant thereto (e.g., it may be planned to institute an import embargo not permissible under any other escape clause in the Charter). In this case there are two alternative outcomes: the Organization is required to grant a limited release from the Charter obligations if the circumstances conform to certain stated criteria; or such a release, if the stated criteria do not apply, may be negotiated as between the industrializing nation and such others as would be materially affected by the proposed restraint. The former alternative is applicable if the proposed restraint is designed to protect a war-born and war-nurtured industry or one which would utilize indigenous primary materials for which export outlets have been abridged or one which, by processing indigenous materials, would enable the country to make more effective use of its resources without permanent harmful effects on the total volume of world trade; or finally if the proposed restraint can be shown to involve no greater detriment to world trade than some alternative permissible means for promoting industrialization.

3. Finally the proposed restraint may violate both the general commercial policy provisions of the Charter and specific contractual commitments undertaken pursuant thereto. In this case, a limited (or unlimited) release from the relevant obligations can be obtained as the outcome of negotiations between the industrializing nations and all others having either contractual rights in the matter or an interest that would be materially affected (or both).

V

As is now well known, the ITO Charter, by prescribing a general rule of most-favored-nation treatment among all signatory nations, theoretically outlaws all preferential arrangements. It proceeds immediately, however, to accept (but to bind against increase) all existing tariff preferences and simultaneously to subject them to reduction by direct negotiation between interested nations in accordance with

certain substantive and procedural rules laid down in Article 17. It proceeds further, however, to provide (in Articles 14 and 44) for the permissible creation of new preferential arrangements under certain defined conditions and rules. Article 15 deals explicitly with preferential agreements; Article 44 with customs unions and free trade areas. Since customs unions and free trade areas may reasonably be regarded as a preferential arrangement under which the margin of preference is 100 per cent of the general rate (or rates) of duty rather than some fraction thereof, it seems not altogether logical for the Charter document to assume (as it does) that preference agreements will always be negotiated for the sake of industrialization and that customs unions and free trade areas will always be negotiated for the sake of expanding total external trade. It is at least conceivable that the opposite would be true at times. Since, however, the Charter language does embody this assumption and does accordingly prescribe distinctly different rules and procedures for the two sets of cases, the matter will be similarly divided for purposes of presentation here.

The provisions of Article 15, dealing with new preference agreements, despite their apparent complexity, are fairly simple. In the first place, any new preference arrangement may be authorized by two-thirds vote of the Organization and will be subject to whatever conditions and qualifications may be adopted in connection with such vote. Secondly, if the proposed preference agreement conforms to certain criteria and procedures, the Organization is required to approve it. In this latter case, the important criteria are that the territories of the agreeing nations be contiguous or at least within a homogeneous geographic region, that the agreement be open to negotiations for accession by other geographically pertinent nations, that the preferential duty rates be applicable only to products of those industries whose establishment is being sought, and that the agreement shall be of limited duration and contain provisions looking toward its own termination; and the procedures, while convoluted in form, are designed to ensure that the interests of other nations shall be either protected or compensated.

The Charter encourages the establishment of customs unions and free-trade areas and stipulates only that their establishment shall not be accompanied by an increase in the general level of duty rates applicable to third parties. The rest of Article 44 is essentially procedural except for paragraph 5 which has to do with the status of pre-existent preferences in relation to the establishment of a customs-union or free-trade area. This problem would be of enormous importance in the event of any serious effort to establish a Western European customs union. All that paragraph 5 does, however, is to refer the matter to

direct negotiation between the parties affected in each case.

It is important to note, however, that under the Charter provisions the Organization maintains fairly tight control over the establishment of customs unions and free-trade areas by requiring the prior submission of an interim agreement embodying a plan and schedule for transition to full customs union status. If the Organization is not satisfied that such plan and schedule are likely in fact to eventuate in a bona fide customs union or free-trade area, the members will not be free to proceed unless they are prepared to modify their proposals in accordance with such recommendations as the Organization may offer.

VI

It would hardly be proper to conclude this enumeration of permanent exceptions without at least mentioning Article 40 which embodies the notorious "escape clause" of recent U. S. reciprocal trade agreements practice and makes it applicable to all commercial policy undertaking not only under Chapter IV of the Charter but also "pursuant to" it. This clause essentially makes "serious injury to domestic producers" a justification for unilateral suspension of obligations assumed, subject to consultation (where possible) with nations that would be affected and subject to the right of such other nations to withdraw reciprocal or equivalent concessions.

VII

Such are the permanent exception provisions of the Charter. Time does not permit an extensive evaluation of them and presumably subsequent discussion will develop it. A few general observations, however, are in order.

1. The security provisions create no real problem.

2. While the circumstances of national policy which made necessary the agricultural subsidy clauses are regrettable, the clauses themselves, given those circumstances, are about the best that could be expected. Without some such general leeway, the Charter would have had no chance whatever of ratification in a number of jurisdictions including our own.

3. The economic development provisions amount in their net effect to a statement that nations may pursue protective restrictionist policies in behalf of infant industries if they can persuade other nations who would be affected thereby to release them from their obligations; and that in certain exceptional circumstances there may be automatic prior approval of such policies. The exceptional circumstances are such that no extensive protectionism under these clauses seems likely.

4. The preference agreements that would qualify for automatic prior

approval would be so limited in time, scope, and probability that they could be considered negligible; and the plausibility of any group of nations obtaining a two-thirds vote of approval for a preference deal of any consequence is nonexistent.

5. The principle underlying the "serious injury" general escape clause may be bad but our limited experience under U. S. trade agreements does not affirmatively suggest that the comforts of this clause can in practice be invoked frequently or effectively.

6. Finally, one comment is in order that perhaps improperly anticipates the general conclusions of this entire group of papers. There is an impression (unjustifiably widespread) that the ITO Charter is a random set of "declarations of principle," violated by a large number of escape clauses so sweeping and so loosely controlled as to destroy whatever value may have potentially resided in the principles. As a previous paper has, I think, conclusively shown, the principles in the Charter are neither random nor vague. On the contrary, the positive content of the Charter proves itself to be a body of very firm and very specific commitments of a scope almost unbelievable when contrasted with the commercial policy actualities of the twenties and thirties. These commitments may not compare too favorably with the theoretician's abstractions of a free world trading order; but I am not cognizant of any authority who considered absolute free trade to be either attainable or indeed even desirable in a world made up of disparate political sovereignties in an international atmosphere neither wholly peaceful nor wholly rational.

As regards the escape clauses, this paper has, I hope, shown that they are not numerous, they are not sweeping, and they are by no means loosely controlled. Dr. Furth's paper dealt with the complex problem of the "transition period." When that period—admittedly of indeterminate duration—is over, the grounds on which nations may seek to escape their commitments under the Charter are strictly limited; the areas of commercial policy in which they may seek latitude for autonomous national decision are for the most part circumscribed to those areas such as agricultural raw materials in which conflicts between our own domestic policies and our generally liberal international policy postulated latitude; and the conditions under which autonomy may be exercised are (as in the case of the "economic development" and "regional preference" exceptions) so closely defined as to make nationalist and regionalist outcomes much less likely than a multilateral outcome.

Under these circumstances the value of the commitments would appear to outweigh the limited risk embodied in the escape clauses.

DISCUSSION

JAMES S. EARLEY: I agree with the authors of these three papers that the Charter commitments are of great potential value to the United States and the world. I agree with Messrs. Furth and Loftus that this conclusion is not negated by the numerous exceptions and escapes the Charter provides. Specifically, I agree with Dr. Furth—whose paper I am to discuss—that most of the currently available “transitional” escapes and the subsequently available “short-run” escapes, embody well-defined principles that constitute defensible and even desirable qualifications upon commitments by nations to trade with each other freely, multilaterally, and without discrimination.

Yet Dr. Furth and I would also agree, I am sure, that the major avenues of transitional and short-run escape from the Charter commitments—namely, quantitative restrictions, exchange controls, and discriminatory application of these devices—are defensible only in the absence of better solutions to the difficulties they are designed to combat. We would agree, I take it, that there is danger they may be used when other solutions, more in harmony with the Charter commitments, would be preferable. We would agree, too, I am sure, that no matter how well justified may be their use, if the escapes must be long or chronically invoked, the commitments will be of little value.

In view of this fundamental agreement, I should like to spend my few minutes emphasizing some aspects of policy required of individual countries and our new international organizations if resort to the escapes is to be minimized and the entire program have a good chance of success.

I shall confine my remarks to the balance-of-payments problem, but discuss separately two distinct phases of it. There is first the problem of overcoming the balance-of-payments disequilibrium that now besets us. This is the task of moving out of the “transition,” of getting initially squared around to where the new “rules of the game” can be employed. The second problem is minimizing use of the short-run escapes subsequently available to countries that experience balance-of-payments difficulties.

Let me discuss the second problem first. The short-run balance-of-payments escapes are so constructed as to be potentially available whether an adverse balance is caused by unfavorable capital movements, domestic inflation, overambitious economic development, special adverse changes in markets for particular commodities, or general contraction of foreign markets resulting from economic depression abroad. Yet it is, broadly, only the last named of these circumstances that provides a convincing rationale for the use of short-run quantitative restriction or exchange control over current transactions in order to protect a country's balance of payments. Adverse capital movements could better be prevented by direct control of them. Domestic inflation should be domestically attacked, certainly not sustained by curbing imports. While economic development programs may validate direct limitation of certain imports, such cases should be distinguished from general restrictions imposed to overcome temporary balance-of-payments difficulties. Falling off of export markets of particular goods in a generally thriving world

economy would seem, in most if not all cases, to call for exchange depreciation to trim imports to exports, with only that mild stimulus to home activity and resource transfer that exchange depreciation and specially depressed export markets would carry with it.

Quantitative restrictions or equivalent exchange controls would, on the contrary, as Dr. Furth points out, be appropriate to combat the deflation and unemployment that threatens countries because of adverse balances (or the deflationary measures required to avert them) consequent upon depression in one or more of the major industrial nations. Deflationary internal measures to fight falling international demand arising from unemployment overseas would almost certainly be harmful. Currency depreciation in such circumstances would help most countries very little, unless carried to beggar-thy-neighbor lengths, in which case it would aggravate other countries' difficulties and provoke retaliation. The shifts in terms of trade and competitive relationships brought about by exchange realignments could do little to restore international equilibrium in an underemployed world. On the other hand, the stimulus to domestic demand that protection via quantitative restriction or exchange control might evoke would help a country ward off depression without any necessary short-period injury to other countries' export trades beyond that inevitable under any method of balancing international accounts against the depressed countries.

These and other considerations, as Dr. Furth has shown, also justify the use of *discriminatory* quantitative restrictions or exchange controls where other countries are out of balance with a single important country because of its depression and unemployment. Following that country into deflation to protect trade balances would be worse than foolish. While general exchange depreciation against such a country might be helpful, the help would not be great if the depressed nation were a large factor in the demand for internationally-traded goods.

It should be recognized, on the other hand, that there is rather little insulating- and even less recovery-value in the use of quantitative restrictions and exchange controls—discriminatory or nondiscriminatory—in times of depression in major industrial countries. The main value of these escapes under such conditions is to permit the use of expansionary measures untenable in their absence. And national as well as ITO officials should appreciate that, with or without such complementary measures, protracted use of escapes will entail loss of the solid advantages of international specialization.

In any case the salient morals appear clear. (1) The "escapes" are just that, not open sesame to prosperity. (2) Except when there is a deficiency of effective demand, it will usually be advantageous, nationally and internationally, to use different remedial measures. (3) The ITO and the Monetary Fund should not sacrifice the greater virtues of multilateralism and nondiscrimination for the lesser virtue of established currency parities. (4) Finally, there is no hope for the Charter commitments being effective if there are severe and protracted depressions in important industrial countries. The major countries must take the lead in holding up the demand for

internationally-traded goods. If they do not, the rest of the world may be able to protect itself by the "escapes"; but the Charter will be only a thick sheaf of paper.

Some of these considerations are relevant to the removal of the "transitional" difficulties the world now suffers. The most important thing is to recognize that present conditions are fundamentally different from those for which the "short-run" balance-of-payments escapes are properly designed. The world's dominant industrial and trading nation, the United States, is now fully employed, infectiously inflationary, and possessed of an unprecedented effective demand for imports. Other nations, likewise, are generally fully employed and suffering from either actual or latent inflation. The problems are not to find export markets and avert deflation and unemployment. The problems are rather to secure essential imports and to develop the wherewithal to pay for them.

That Britain and most European countries are now in "fundamental disequilibrium"¹ is a classic understatement. The essential fact is that these countries generally are living beyond their means despite excellent markets for their exports. In order to achieve eventual balance, more of their resources must be freed for export uses and their dollar imports must be reduced. To achieve the latter by discriminatory quantitative restriction and exchange control, as now, is at best a temporary makeshift. Gradually these countries should redirect their resources and trade policies so that their aggregate dollar purchases can be limited by other methods to their dollar earnings.

This is admittedly a Draconian prescription in present circumstances. The somber fact is that these countries must have, for survival and revival, more U. S. resources than they can pay for. ERP aid is an imperative stopgap. But during the breathing spell it provides, more fundamental adjustments, in harmony with the principles of the Charter, should be put under way.

On our side increased (and untied) international lending is called for. Further—and preferably unilateral—reduction of our trade barriers would be helpful. Deficit countries, on their part, must gradually substitute internal restraints on expenditure for bilateral and discriminatory measures of balancing their international accounts.

In the meantime a significant step, it seems to me, would be downward readjustment of most European currencies in relation to the dollar. Where present rates tend to stifle exports to hard-currency countries, the benefit would be immediate and direct. Beyond that, the higher import prices following such depreciation should gradually cut down on less essential imports and, by underlining the need for reduction of internal expenditure, help free resources for exports.

Artificially high exchange rates are of no real benefit to these countries

¹ As appropriately defined by Dr. Triffin (*International Monetary Policies*, Board of Governors of the Federal Reserve System, 1947, pp. 77-78) as "a maladjustment in a country's economy so grave and persistent that the restoration or maintenance of satisfactory levels of domestic activity, employment, and incomes would prove incompatible with equilibrium in the balance of payments, if not accompanied by extraordinary measures of external defense, such as a change in the exchange rates, increased tariff or exchange control protection, etc."

under present conditions. Exchange depreciation that simply reflects the war-altered relations between Europe and America would harm neither the U. S. nor the depreciating nations—especially since, during the period of revival of their full strength, the U. S. is to cover unbalanced essential import requirements.

The measures of "escape" now being used by Britain and European countries not only prejudice the fate of the ITO program. So long as America maintains full employment and is willing to reduce protectionism, they are also false measures of promoting opulence in a largely impoverished world.

WOLFGANG F. STOLPER: Professor Loftus has given a listing of the permanent escape clauses of the ITO Charter and has called on the discussion to start an evaluation of the Charter. I intend to divide the few minutes at my disposal evenly among three points which are complementary to rather than competitive with Professor Loftus' presentation. I want first to place the ITO Charter in the context of the whole international program. The upshot will be that the escape clauses, far from making the Charter meaningless, make it next to impossible for a signatory to get out from under his obligations, except in situations which have always led nations to break their obligations.

I will, secondly, make this point more specific, by discussing in detail the so-called "Mexican escape clause," which on the surface seems to permit the United States to withdraw any concessions made, though only after previous consultation. But I want, thirdly, to temper the optimism concerning the permanent escape clauses by stepping slightly outside the strict terms of reference of this paper, by pointing out that the real dangers to the Charter come from temporary exceptions which it will take all the wisdom and leadership of the United States to prevent becoming permanent in fact.

As to the first point, I beg you to suffer for a moment my taking you over some familiar ground. The ITO Charter makes sense only if it is kept in mind that it is itself only a part of a substantial international program which has relied on the International Monetary Fund to take care of convertibility, on the International Bank to take care of ordinary capital movements, and on the generous aid of UNRRA, post-UNRRA, the British Loan, ERP, and the rest of it, to form a solid basis in the transition period. This international program of the United States in its entirety aims at re-establishing a reasonable facsimile of the gold standard system; it wants to *re-establish* by international agreement the conditions for a working international system, which consists precisely in this combination of convertibility, capital movements, and free trade. As Professor Tinbergen has put it: We want to establish consciously the conditions for a system which worked unconsciously before 1914.

This is not the occasion to go into the reasons why this system has to be *re-established*, why the international gold standard broke down in the first place. Suffice it to say that under the gold standard every nation could in fact do internationally as it pleased, and that it did do exactly this.

The present international chaos is the background against which the ITO

Charter with its escape clauses has to be judged. If the escape possibilities open to a signatory of the Charter are judged against some idealized as well as unhistoric version of the gold standard, they no doubt can be made to appear to be fatally weakening the avowed purposes of the Charter. If, however, the Charter and its escape clauses are viewed against the background of what every nation could and did do in the past, both recent and remote, I believe that the term "escape clause" turns out to be a most fantastic misnomer.

Any nation is at present able to do what it wants and what it conceives to be in its interest, subject only to such treaty limitations as it has incurred. If a nation now signs the ITO Charter, it automatically thereby restricts its area of freedom of action, or even of negotiation. The signing of the Charter is sweetened by allowing the nation to escape from its new obligations under certain conditions, but these conditions are so restrictive as to leave no possibility of abuse. The escape clauses appear on inspection like an elaborate system of traps to keep the signatory nation from getting out of its obligations, except when keeping the obligation would result in severe damage to that nation. If the Charter is generally accepted in its entirety, I am inclined to think that it will have achieved more than even the gold standard in its heyday did.

To make this assertion specific, I turn now to my second point. Professor Loftus has mentioned only briefly Article 40 which, in his words, "embodies the notorious 'escape clause' of recent reciprocal trade agreements practice." Professor Loftus has concluded that the principle of Article 40 is bad, but that it is unlikely to be invoked frequently or effectively, if the limited experience under the U. S. trade agreements practice is a guide.

Such an escape clause has been embodied in the Mexican and Paraguayan Trade agreements. It was (generally) incorporated in the trade agreements entered into at Geneva in 1947; it will be included in all future agreements. Article 40 of the ITO Charter is an almost literal generalization of this article.

Paragraph 1 of Article 40 which is the crucial paragraph reads as follows:

1(a) If, as a result of *unforeseen developments* and of the effect of the *obligations* incurred by a Member under or pursuant to this Chapter, including tariff concessions, any product is being imported into the territory of that Member in such *relatively increased quantities* and under such conditions as to *cause or threaten serious injury* to domestic producers in that territory of like or directly competitive products, the Member shall be free in respect of such product, and to the extent and for such a time as may be necessary to prevent or remedy such injury, to suspend the obligation in whole or in part or to withdraw or modify the concession.

The text is substantially identical with that embodied in the Geneva trade agreements. There are a number of purely formal changes in terminology. The only material difference is that the present formulation includes the word "relatively" in "relatively increased imports" while the earlier formulations did not.

Now the Tariff Commission prepared a brief giving "Procedure and Criteria with Respect to the Administration of the 'Escape Clause' in Trade Agreements," dated February 24, 1948, exactly one month before the Final Act

of the United Nations Conference on Trade and Employment in Havana was signed. All the conclusions of the Tariff Commission as to the applicability of the escape clause stand unaltered except for the mentioned change from an absolute to a relative increase in imports.

The Tariff Commission points out, first, that the escape clause requires that imports increase *quantitatively*, not merely in dollar volume, although now an increase relative to domestic production is sufficient. The problem of finding a proper base need not be pursued further here.

But this relative increase has to be due to *unforeseen* developments. In other words, just because imports hurt some producer, this does not give the United States the right to invoke the clause, if this was foreseen, and since the increase of imports is one of the purposes of the whole trade agreements program, this increase cannot be considered *prima facie* evidence at all that the clause may be invoked. In the same manner, the formulation of the article requires, according to the Tariff Commission, that imports have increased relatively to domestic production *at least in part as a result of the concession*, and not for other reasons.

Furthermore, the conditions under which the clause may be applied are *additive*. It cannot be invoked if the damage has been foreseen; neither can it be invoked if the damage has not been foreseen but has not even partially been due to the concession. And the Commission takes several pages to discuss possible criteria to determine whether an industry has been damaged, and if so, whether it has been seriously damaged.

To be sure, the Commission's interpretation is not legally binding. Nevertheless, the formulation of the escape clause makes an escape rather difficult. In addition to these perhaps somewhat legalistic arguments, it may be recalled that imports into the United States tend to have a high income elasticity but a relatively low price elasticity. This in itself tends to make it unlikely (though, of course, not impossible) that situations will actually occur in which the escape clause may be applied. For it will be noticed that when times are good in the United States, imports will be big, but there will not be serious damage to a domestic industry. If, on the other hand, the United States should experience a depression, our industries are likely to be in serious trouble, but there will not be imports on which the damage could be blamed.

I conclude from this analysis that the escape clause embodied in the trade agreements and in the ITO Charter does not, in fact, permit the United States to withdraw from obligations incurred under a trade agreement, except under conditions which are not likely to occur. The only situation in which the escape clause could be invoked would be a serious depression in which the United States is simultaneously flooded with imports. This is precisely the kind of situation which has in the past led to the breakdown of the gold standard. If it should recur, I believe that the only realistic (though not desirable) alternative to the escape clause would be denunciation of existing trade agreements and not a continuation of the present practices to the bitter end.

Pretty much the same conclusion would be reached when the other escape clauses are analyzed. Professor Loftus has already discussed in detail the escapes open to so-called "backward" countries. His conclusions are that "no extensive protectionism under these clauses seems likely." It seems difficult to disagree.

Thus the interpretation of the so-called "permanent" escape clauses of the Charter is unqualifiedly optimistic. The real escapes from the obligations imposed by the Charter come, I believe, from the balance-of-payments provisions in the Charter, and even though they are formally temporary in character, they threaten to become ossified into permanent fixtures.

The balance-of-payment escape clauses are fundamentally due to the express recognition of every country's right to maintain a high level of domestic employment by any methods which are not of the beggar-my-neighbor policies kind. Unfortunately, the prohibition of beggar-my-neighbor policies is not identical with the absence of import restrictions. And, if the balance of payments is badly out of equilibrium because of high income, imports might easily be larger in spite of their being quantitatively controlled than they might be when the balance-of-payments disequilibrium has been removed by restrictive domestic policies.

In other words, planned dollar shortages are in principle permissible, and import restrictions may in fact be imposed in general as well as in a discriminatory manner, at least in the short run.

The problem involved is, of course, the time-honored one of external versus internal stability in a new, though somewhat transparent, guise. The Charter's recognition of the right of each nation to pursue full employment policies is only recognizing what is inevitable as well as possibly what is desirable; the Charter simply bows to the fact that no country will at present permit any other country to interfere in its domestic policies.

The relevant provisions are embodied in Articles 20-23. Briefly, during the transition period quantitative import restrictions and discriminatory practices are permissible "to safeguard [the nation's] external financial position and balance of payments." (Article 21, paragraph 2.) To be sure, the provisions expressly oblige members "in carrying out their domestic policies, to pay due regard to the need for restoring equilibrium in their balance of payments on a sound and lasting basis, and to the desirability of assuring an economic development of productive resources." (Article 21, paragraph 4, c.)

Unfortunately the same article also states that no member should be required to change its domestic policies "on the ground that a change in such policies would render these restrictions unnecessary" (Article 21, paragraph 4, b, i), and it even permits a nation "to give priority to the importation of those products which are more essential in the light of such policies" (Article 21, paragraph 4, b, ii).

Now it is true that Article 21, paragraph 6, provides for discussion in case of "persistent and widespread applications of import restrictions under this article, indicating the existence of a general disequilibrium which is restricting

international trade," and it is also true that all exceptions are intended only for the duration of the balance-of-payments difficulties and that they are not "permanent" escape clauses in the literal meaning of this term.

Nevertheless, it is difficult to conceive of selective import restrictions which are not at the same time discriminatory. And it is also difficult to see an end of this transition period (except by an unlikely accident) as long as the domestic policies of individual member nations are completely sovereign. As long as each member pursues independent domestic investment policies, simultaneously stabilizing, by hook or by crook, prices and the foreign exchanges, it would be extremely unlikely if they could escape balance-of-payments difficulties. This is shown clearly by foreign trade multiplier analysis, which also indicates that the volume of trade with the import restrictions might, as suggested, be larger than it would be in equilibrium.

Whether or not the Charter as a whole will be successful will not, therefore, in my opinion depend on the general provisions and the general permanent escape clauses. As far as these aspects are concerned, the Charter seems an excellent document whose provisions have been carefully thought through. The success of the Charter depends *only* on the time-honored problem of how individual nations will in fact compromise their strong desire to be completely free with the necessity of living in a world in which there are also other nations. It is the temporary exceptions which threaten the success of the Charter. What optimism one may feel in this connection derives again from the fact that the ITO is only part of an international program and that the nations may find it to their advantage to let international co-operation influence their domestic policies, even though they might not like to be tied down in this matter.

CALVIN B. HOOVER: I find myself in agreement with the conclusions of the three main papers and indeed with the comments which Dr. Earley and Dr. Stolper have made on these papers. Dr. Gordon has made a convincing case for the proposition that the general commitments of the nations under the ITO Charter are not a set of random general principles but are a set of basic agreements which have been carefully worked out and which are of great significance for the future of international trade. Dr. Loftus has well substantiated his statement with regard to the escape clauses. "They are not numerous, they are not sweeping, and they are by no means loosely controlled." He has shown this to be true with respect to the permanent exceptions to the commercial policy provisions of the Charter and Dr. Furth has done the same thing with respect to temporary escapes from commitments under the Charter. I hope to point out a little later, however, that logical as has been the division of the discussion between permanent exceptions and temporary escapes from the standpoint of the most effective means of analysis, the real danger to the Charter consists in the temporary escapes becoming in fact permanent. This point has been developed in considerable degree by Dr. Earley.

It is perhaps possible to reinforce Dr. Stolper's comment on the possibility

of the "Mexican clause" becoming a serious deficiency in the Charter. The provision by which concessions granted by nations can be revoked if serious harm is caused to domestic industries might be thought to completely vitiate such concessions. As Dr. Stolper has pointed out, however, this provision has been so drawn that it cannot logically and legitimately be invoked in most cases which are likely to arise.

I suppose a rigorous interpretation of the doctrine of free trade would hold that a removal of trade barriers depends for its beneficial effects upon the economy of any country precisely to the degree that it offsets the injury which is done to industries which previously had depended upon the protection of trade barriers for their existence. The wiping out or at least the curtailment of such an industry was what made it possible for economic resources to be used in the expanded production of goods in which the country in question had a natural comparative advantage. Under present circumstances, however, when we are running an enormous excess of exports over imports, the removal or diminution of our trade barriers, if all worked out well, might serve not only to shift productive resources to more economically advantageous employment but might also serve in some degree to "cure" our excess of exports over imports. This would occur through increasing imports which would not necessarily be substitutes for goods which had been previously produced in the United States. If all worked out smoothly we might expect a linked series of effects consisting of a lowering of our tariff, an increase in our imports, a diminution in our grants-in-aid abroad and a lowering of our taxes on lower income groups. In this way the lowering of trade barriers would simply enable our population to buy more goods from abroad and to avoid having to send out such a large volume of unrequited exports.

It is inevitable that there will be a great deal of dissatisfaction among idealists who believe in a simple doctrine of free trade with both the temporary escape clauses and permanent exceptions of the Charter. As Dr. Furth has so well expressed it:

These commitments may not compare too favorably with the theoretician's abstractions of a free world trading order; but I am not cognizant of any authority who considered absolute free trade to be either attainable or indeed even desirable in a world made up of disparate political sovereignties in an international atmosphere neither wholly peaceful nor wholly rational.

Even among American industrialists who are late converts to the principle of removal of trade barriers and controls there is a tendency to be exceedingly impatient with anything other than simple removal of these barriers and controls. Unfortunately it is simply impossible to return to even the kind of situation in international trade which existed prior to 1914. The existence of fully collectivised, wholly controlled and partially controlled economies is in part responsible for this. The higher importance which most countries place upon domestic full employment and stability of their internal price levels over full exploitation of the advantages of international specialization through trade likewise helps to account for the necessity of something other than the simple and uncomplicated removal of barriers and controls

in order to expand world trade. Finally, the insistence of practically every country in the world in placing higher priorities for the use of foreign exchange on the purchase of goods necessary to the national economy over less essential commodities strengthens this trend. The development of the International Monetary Fund, the International Bank, and the ITO itself are all efforts to carry forward the expansion of international trade in a world which is no longer that of 1914 through the development of a new types of institutional arrangements appropriate to the times.

Closely associated with what Dr. Earley has said, the possibility of the Charter actually coming into effective operation depends basically upon two things. The important industrial countries of the world must be able to prevent serious and long continued unemployment and the basic deficit in the balance of payments of most of the rest of the world with the United States must be cured.

The long continued deficit in the balance of payments of the European continent with the United States can be taken care of temporarily by extraordinary aid such as that under the Marshall Plan. So long as this extraordinary and large-scale aid is being furnished, however, the provisions of the Charter are unlikely to be of much importance in determining the character of international trade. My own experience with planning the import and export programs of the countries of Western Europe while ERP is in operation makes it quite clear that decisions with respect to how many dollars will be placed at the disposal of a particular country for the purchase of specific commodities almost completely overrides the effect of ordinary trade barriers or lack of them. By way of example, it was proposed by a committee of OEEC on the suggestion of the British that no dollars be made available during the period June 1, 1948, to June 30, 1949, for the purchase by Europeans of automobiles produced in the United States. It was argued, with a good deal of logic, that under present circumstances it was not reasonable to use scarce dollars for the purchase of automobiles from the United States when they could be produced in Europe. Indeed this proposal might well be viewed as a most laudable effort to reduce European dependence upon American charity. If this policy had been followed, however, it would have had the same effect as an absolutely prohibitive tariff or quota on American cars. It would have been done, however, not by the use of any of the ordinary trade barriers but simply through the planned allocation of dollars.

It is worthy of comment also that Marshall Plan aid, although absolutely necessary to deal with the present critical deficit in the balance of payments, does have some effect in enabling European countries to put off taking measures which could be expected to have a fundamental effect in "curing" the deficit. Thus, so long as France, for example, can obtain enough dollars without cost to herself to cover the cost of all her commodity imports there is a lessened incentive to reduce internal purchasing power through monetary and fiscal reform which might be expected to "cure" the deficit through the expansion of exports and curtailment of imports. There is, indeed, a rather disturbing tendency among some European countries to feel that goods from

the United States are always cheaper so long as they can be purchased with costless dollars. A whopping big deficit in the balance of payments covered by grants from the United States is, of course, one way to enjoy a higher standard of living than would otherwise be possible with a given expenditure of effort.

It is of the highest importance that we should insist upon the continuous curtailment in our annual grants and so-called "loans" to European countries, so that the end of the program will at least be in sight by 1952. If we ever get in a position where we have allowed ourselves to be committed to underwriting permanently deficits in the balance of payments of other countries with ourselves we can be sure that we would then be living in a world in which the principles of the Charter would be of doubtful significance.

THE ECONOMIC CONSEQUENCES OF SOME RECENT ANTITRUST DECISIONS

THE A & P CASE¹

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Unlike the other cases to be discussed here, the A & P decision, a Sherman Act conviction, is now on appeal to the Seventh Circuit Court of Appeals. It would be improper and it is unnecessary to discuss the question of innocence or guilt. The time at my disposal will suffice only for a brief summary discussion of what may be expected if the economic theory and policy of the Antitrust Division do finally and completely prevail. These are, in my opinion, the most important issues of public policy, but they are only a small part of the whole case, and have no necessary relation to its legal merits. The facts alleged by the Antitrust Division of the Department of Justice are assumed to be correct; their theory and policy relate chiefly to A & P methods in (1) selling goods, (2) integration of manufacturing and retailing, and (3) buying.

I. *Selling Policy*

Both sides agree that the A & P Company deliberately reduced its gross margins and thereby its prices; increased its sales and thereby lowered its unit costs so sharply that the ultimate profits were all the greater. This, to the Department of Justice, constitutes "selling below cost." That is, A & P succeeded in selling below the cost which would have been incurred if they had remained at the lower level of output. The government, by implication, insists that they *should* have stayed there. And, since price cuts are only undertaken—by anybody—to increase volume and profits, or to prevent losses, this amounts to a prohibition of any and all price competition.

Perhaps, however, such competition is self-destroying; perhaps A & P might in time drive all or most of its competitors out of business and then be in position to gouge the public. I do not have the detailed knowledge of the food industry which would be necessary for a judgment on this point, nor is such knowledge available in the record of this case. The Antitrust Division protested, and by and large they had their way, that such material was irrelevant to the case. Doubtless they were

¹ An expanded version of these brief remarks will be published elsewhere. They are based on an unpublished doctoral thesis, "The Dominant Firm, With Special Reference to the A & P Tea Co." (Harvard, April, 1948). My thanks are due to the Social Science Research Council, whose award of a fellowship made the investigation possible; and to Robert R. Bowie, Milton Katz, and Edward S. Mason for their suggestions and criticisms.

correct on the legal issue; but perhaps so much the worse for the law. In any event, A & P bulks no larger in today's market than it did sixteen years ago.

II. *Integration*

A & P manufactures a substantial though minor share of the goods it sells. These are transferred out of the manufacturing department at market prices, and profits are calculated for the factories. The government contends that these "profits from the non-retail end of the business . . . subsidized the retail business," enabling the latter to undersell retail competitors. This is considered "an inherent abuse of the vertical integration of A & P's System" (*sic*).

Now "inherent" is certainly the right word. Any integrated company whatever can, and most of them do, calculate profits at every stage. Absence of profits at an early stage indicates that the department is not, by the standards of the market, operating efficiently. To an economist, it seems like a clear case of wasted resources. Even when the department furnished a few crumbs of profit, it might be an actual burden on the rest of the enterprise because it was absorbing and risking the firm's resources and bringing in all too little in return. But since there would be some profits with which to "subsidize" the later stages of the business, it would run into the new prohibition. The only way to be both integrated and legal is to be not only inefficient but completely inefficient.

Furthermore, it is not difficult to see how horizontal integration, or diversification, can also be considered as an abuse of competition through the "siphoning" of profits from one department to another. The Department of Justice has mistaken an accounting fiction for an economic reality. The consequence of its doctrine would be to destroy any business firm which can be set up as more than one accounting unit, each able to "subsidize" the others.

Lost in this welter of formalism are the two important questions: (1) Did the A & P use its size and integration to destroy more efficient but smaller competitors? (2) Is the integrated A & P system more or less efficient than its nonintegrated rivals? Neither question can be satisfactorily answered because the Department of Justice has not been interested in them. Such evidence as I have seen indicates that A & P is able to avoid the huge selling, solicitation, advertising, and other costs of transferring ownership along the successive stages of the distributive process. These large economies have resulted in profits to the Company, savings to the consumer, and emulation by other food distributors, leading to further savings. The confusion over "subsidizing" and "siphoning" reduces to this: The government would reverse the

process because A & P's more economical method of business gives it a great advantage over many competitors.

III. *Buying Policy*

The Department of Justice considers that A & P has received millions of dollars in rebates and discounts, thus gaining an unfair advantage over its competitors. Let us first distinguish, as Justice does not, between discounts or allowances which are not discriminatory and those which are.

It is, fortunately, unnecessary to explain here that a firm that obtains the same net return from each of its customers is not discriminating among them. If it sells to one through brokers, who keep part of the list price, and sells to another who acts as his own broker, the equality of net returns—i.e., the absence of discrimination—can only be maintained if he charges the direct buyer a lower price. And this differential is an advantage to the buyer if, *and only if*, he can do the job of brokerage more cheaply than others can do it for him. If his buying methods are more expensive, he is under an actual disadvantage.

The Department of Justice largely ignores these considerations. Overlooking the simple fact that A & P buying offices have expenses like any others, they treat *gross* brokerage allowances as a competitive advantage. But if it is illegal, as they insist, for a seller to accept equal net returns from all buyers, then it must be that price discrimination is required by law.

What are the probable consequences? Note that this particular kind of discrimination is implicit in a uniform list price to all buyers. This is strongly reminiscent of zone pricing systems, with a uniform price to all locations, and even more strongly redolent of many trade association and NRA codes, which attempted to curtail price competition by making prices more easily comparable, and curtailing the advantages of large buyers, with their rude demands for lower prices.

Moreover, the same associations that worked to establish systematic patterns of implicit price discrimination protested mightily against explicit price discrimination. Here, too, the Department of Justice follows the "party line." Their opposition is based on this proposition: If sales are made to one buyer at a price lower than that charged others, price to these others must be further increased in order to offset the loss on the sale to the favored buyer. In other words, a price concession to one buyer cannot lower the average gross revenue of the seller. This holds at all times and under all circumstances; if there are any qualifications, I have not seen them. The less said about this part of the government theory the better. It implicitly assumes that the industry selling goods is completely stable, that all suppliers have identical cost

and demand curves, and that pure competition exists. All this, and price discrimination too! When the premises are both wildly unrealistic and also self-contradictory, it is best to give the conclusion a quiet and decent burial.

But right or wrong, such conclusions hold largely for static patterns of discrimination. These are less interesting and important than is sporadic, buyer-initiated price discrimination as a force to initiate general price reductions, to disrupt or destroy a stable oligopoly price system. The architects of such systems dislike *this* kind of discrimination, and the Antitrust Division is doing their work.

The government also alleges that the allowances granted by manufacturers for A & P advertising were frequently greater than the cost of such advertising and hence constituted disguised and discriminatory price concessions. In effect, the supplier cut his net price to A & P for the sake of more A & P patronage. Prices to consumers are not necessarily lowered by such a process; but in this particular case, if we accept the facts as presented by Justice, consumers did benefit. The consequence of the government policy would be higher prices and hence lower output. But the advertising industry would benefit, and the bad custom of competing through price reductions would be further checked. Perhaps these are offsetting benefits.

THE TOBACCO CASE OF 1946

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"If the law supposes that," said Mr. Bumble, ". . . the law is a ass, a idiot."

—Charles Dickens, *Oliver Twist*

The ways of the law are devious and unpredictable. Since the law is (in Tennyson's words) a "wilderness of single instances," it is dangerous to assume that future court decisions will always be fully consistent with those of even the recent past. Yet, being neither prophet nor crystal-gazer, I must credit the courts with a logical consistency which I know they do not possess. I can therefore discuss even the probable economic consequences of the *Tobacco* case only upon the basis of two dubious assumptions: (1) that the courts really said what I believe them to have said in the *Tobacco* decision; and (2) that they will carry to their logical conclusion the legal implications of that decision. Having satisfied my conscience by this urgent prefatory *caveat*, I can more honestly turn to the difficult task at hand.

The Significance of the Tobacco Decisions

It is the task of the law of monopoly to distinguish between business practices which are in the public interest and those which are not. In carrying out this difficult problem of evaluation, the courts have had to devise and apply tests capable of differentiating between approved and disapproved practices. As elsewhere in the law, the law of monopoly has reflected the perennial conflict between certainty and change. Two tests of monopoly have become traditional: (1) On the question of conspiracy, does the evidence show that competitors actually agreed? (2) On the question of monopolization, was there overt predatory action to exclude competition? These two tests had the advantages of certainty—they could be applied with sufficient consistency to assure equality of treatment before the law; and they were sufficiently concrete to indicate the practices which must be avoided to escape condemnation under the law. Unfortunately, however, these tests have become increasingly inadequate as the structure and practices of American industry have taken new and more subtle forms. Thus, the need for change—for adapting the law to a new industrial environment—has become more and more apparent.

In the *Tobacco* case,² at the necessary cost of new uncertainties,

¹ I am indebted to my colleague, George W. Stocking, for his helpful but sometimes dissenting criticisms of the original manuscript of this paper.

² *American Tobacco Co., et al., v. U. S.*, 148 F. 2d 416 (1944); 328 U. S. 781 (1946).

the courts finally met this need for change in two ways. First, the Court of Appeals brought wholly tacit, nonaggressive oligopoly fully within the reach of the conspiracy provisions of the Sherman Act. Prior law already had made clear that—in the absence of “formal agreement”—an unlawful conspiracy can be inferred from “concert of action,” “unity of purpose,” or “a common design.” Furthermore, in the *Tobacco* case, there was plentiful and undisputed evidence that the three defendant dominant firms had behaved identically with regard to prices, terms of sale, and general business practices. Nevertheless, the case was probably unique in that there was not a whit of evidence that a common plan had even been contemplated or proposed.³ The government’s evidence was admittedly *wholly* circumstantial. The fact of identity of behavior was offered as the basis for inferring both the existence and the elements of the alleged common plan and the defendants’ knowledge of that plan. Each was alleged to have acted similarly with the knowledge that the others would so act, to their mutual self-interest. Thus, the *Tobacco* case brought the basic assumption of modern oligopoly theory squarely before the courts. In finding in the facts a reasonable basis for the jury’s inference of unlawful conspiracy, the Court of Appeals accepted the practical implications of that assumption; namely, that a few dominant firms will, perhaps independently and purely as a matter of self-interest, evolve nonaggressive patterns of behavior. Thus, attention was shifted from form to probable results. Upon final appeal, the Supreme Court refused to review this part of the lower court’s findings.

Second, in the *Tobacco* case, the existence of power to exclude competition, not the abuse of that power, became the new test of illegal monopolization. Thus, the recent *Aluminum* doctrine⁴ was approved and was extended to conspiratorial oligopoly. Accepting without review the judgments below that a conspiracy had been established, the Supreme Court held that neither the exertion of power to exclude nor the actual exclusion of competitors is necessary to the crime of monopolization. Existence of the power and intent to exclude will suffice. Since the Court was willing to infer intent from the concerted action of the conspirators, the power to exclude—as shown by the degree of market control of the combination—was made the crucial issue. Thus, attention was shifted from monopolization as an *action* to monopoly as a *condi-*

³ In this regard, it therefore differed from the *Interstate Circuit* case (306 U. S. 208, 1939), upon which the government relied. There it was held (at 226) that the finding of an agreement among distributors, while supported by the evidence, was not necessary: “It was enough that, knowing the concerted action was contemplated and invited, the distributors . . . participated in it.” In that case, however, unanimity of action would have served only as evidence of adherence to a common plan, the proposal of which was supported by direct evidence.

⁴ *U. S. v. Aluminum Co.*, 148 F. 2d. 416 (1945), the Circuit Court serving as the final court of appeal.

tion. The Supreme Court explicitly limited the precedential significance of this decision to cases in which conspiracy is an essential ingredient. Nevertheless, so broad was the lower court's application of the law of conspiracy to the facts that, if it were generally followed, the behavior of few oligopolies could probably escape condemnation as "conspiratorial."

It should be obvious that the *Tobacco* decisions of 1946 must be given a prominent place in the historical development of the case law of the antitrust acts. And, if my interpretation of their legal implications is correct, the *Tobacco* decisions have gone far to close the wide gap between the legal and economic concepts of monopoly, which became so apparent to economists during the thirties.⁵ In accepting detailed similarity of behavior among a few dominant firms as a reasonable basis for inferring illegal conspiracy, the courts have finally brought the law of conspiracy into harmony with the economics of oligopoly. Furthermore, the legal and economic concepts of monopoly (including conspiratorial group monopoly) have been brought closer together. Thus, Rostow is correct in finding, on the basis of the *Aluminum* and *Tobacco* cases, that "market control is now a far more important theme in Sherman Act cases than handicaps on an individual's power to do business. The old preoccupation of judges with evidence of business tactics they regarded as ruthless, predatory and immoral has all but disappeared. . . . We are close to the point of regarding as illegal the kind of economic power which the economist regards as monopolistic."⁶ That the *Aluminum* and *Tobacco* decisions have revitalized the Sherman Act, especially Section 2, seems beyond serious doubt. Furthermore, economists can rejoice that the precepts of modern economic analysis have so quickly found their way into the case law of monopoly.

Unlike lawyers of the Antitrust Division, however, economists cannot be satisfied simply by the scoreboard of cases won by the government. Although some important legal "twilight zones" remain, the widespread application of the new tests of monopoly to oligopolistic industries should lead to a high proportion of government victories from now on. It is clear, however, that without remedial action, these legal victories will be of relatively little economic or social consequences. And, if remedial action is taken, it is by no means certain that the economic consequences will always be in the public interest.

⁵ Cf. E. S. Mason, "Monopoly in Law and Economics," *Yale Law Journal*, Vol. 47 (1937-38), pp. 34-49.

⁶ Eugene V. Rostow, "The New Sherman Act: A Positive Instrument of Progress," *Univ. of Chicago Law Review*, Vol. 14 (1946-47), pp. 574-575 *et seq.* For a more cautious appraisal of these two cases, cf. Edward H. Levi, "The Antitrust Laws and Monopoly," *ibid.*, pp. 172-181.

The Prospects of Government "Victory"

With regard to the *Tobacco* decision, counsel for Reynolds Tobacco Company argued that:

... the significance of these convictions extends far beyond the immediate consequences to petitioners and the tobacco industry. . . . For, *if these convictions be lawful, the pattern of prosecution is applicable—with the result of almost certain and repeated conviction—to every other executive and corporation in a mass production industry* . . . in which, as a matter of common knowledge, economic forces have produced identities or close similarities in manufacturing, packaging, pricing, advertising, marketing and even raw material acquisition.⁷

The present writer is willing to accept this appraisal as being at least within the realm of possibility. Given the widespread pattern of domination-by-a-few in modern American industry, counsel for Liggett & Myers was also probably correct in arguing that "the common practices of the tobacco industry are in many instances usual features of business life today, and in all instances practices which businessmen guided by . . . self-interest, acting reasonably and in the absence of agreement, might adopt."⁸ In view of this fact, the conviction of the major tobacco companies suggests at least a presumption in favor of the view that the Antitrust Division's ability to find and prosecute monopolies successfully is now largely limited only by the extent of its own resources in bringing cases to trial.

Nevertheless, we must recognize that at least two important questions are as yet unanswered. First, what types of similarity of behavior among oligopolistic competitors will the courts hold to be insufficient to sustain an inference of illegal conspiracy? In the *Tobacco* case, the circumstantial evidence supporting such an inference was very strong—considerably stronger than the evidence which could be marshaled against many other oligopolistic industries. However, the extent to which the courts are willing to go in finding illegal conspiracy among oligopolists will depend at least as much upon their judgment and preconceptions as upon the facts of any specific case before them. The conspiracy doctrine of the *Tobacco* case certainly permits them to go about as far as they like in this direction. Second, what is the legal status of a single dominant firm of intermediate size (say, controlling 50-65 per cent of an industry), such as was involved in the *Steel* and *Harvester* cases? Until the courts explicitly apply recent doctrine to a situation of this sort, the law will continue to treat loose "conspiracies" more severely than (within certain limits) such a single dominant firm

⁷ In the Supreme Court of the U. S., October Term, 1944, No. 840, *Reynolds v. U. S.*, Petition for Writ of Certiorari, p. 14. Italics added.

⁸ In the U. S. Circuit Court of Appeals, 6th Circ., No. 9138, *Liggett and Myers v. U. S.*, Brief on Behalf of Appellants, p. 234.

with an equal or greater degree of market control.⁹

Despite these remaining "twilight zones," the conclusion is apparent: in antitrust action against oligopolistic industries, the prospects of government victory are now relatively bright.

"Victory" without Remedial Action

It is the writer's belief that, in the *Tobacco* case, the courts reached a conclusion which—in the main—economic analysis would support. Nevertheless, the fact remains that the court in effect condemned the natural, normal, and intelligent consequences of an oligopolistic market structure. The difficult question of appropriate remedial action was therefore placed in bold relief. As a criminal prosecution, the *Tobacco* case provided no remedial action. Thus far, therefore, the government's victory has been (apart from a quarter-million dollars of fines) almost an empty one.

Given the present structure of the industry, until now left untouched by the government, the writer must admit a feeling of some sympathy for the arguments of counsel for the tobacco companies. Thus, counsel claimed that, even if guilty, they were "entirely without guide as to how they may lawfully avoid the creation of evidence of future Sherman Act violations against themselves, unless they cease business altogether." For example, must Reynolds refrain from "percentage buying" of leaf? And if it does, and its competitors do likewise, "will it or they not then be accused of manipulating prices, allocating tobaccos, and discriminating against growers through intermittent buying . . .?" Or "must Reynolds desist from charging for its product the price charged for a competitive product, and must Reynolds, by prosecution

⁹ Reynolds' counsel posed essentially this same problem in the following argument, even though (written prior to the final *Aluminum* decision) it was based upon a false premise. Since it was not denied that "exclusionary action is essential to monopolizing by a single person or entity":

"It should *a fortiori* be held essential in a case involving a number of separate entities severally engaged in competition (albeit imperfect) with each other. Otherwise, the whole notion of group monopolizing becomes illusory. Without concerted action to exclude others from the field, there is no justification for analogizing the position of the several entities to that of a single trading unit seeking sole, or practically exclusive, trading privileges. Nor is there any warrant for aggregating their power in order to show control over the field. For, until action to exclude is taken, the power of none is employed to fence in the field in the interest of the group. On the contrary, the power of each is being employed in competition with the others and constitutes a disruptive or centrifugal force. And an unexecuted intent to exclude someone else at some indefinite time and by some undetermined means does not serve to fuse that power and make of it a centripetal force." (In the Supreme Court of the U. S., October Term, 1945, *Reynolds v. U. S.*, Brief for Petitioners, pp. 47-48.)

The extent to which the *Aluminum* doctrine is applicable to single dominant firms in other industries is obscured by the fact that Alcoa's percentage control was very large (90 per cent). In the *Aluminum* opinion, Judge Hand himself expressed doubt that a single firm controlling 60-64 per cent of a market was a monopoly; he was certain that 33 per cent was not. Significantly International Harvester's market position had been 64 per cent.

or otherwise, attempt to prevent a competitor from selling at Reynolds' price?"¹⁰ Or again:

What are the specific policies and practices we must abandon, modify, or adopt in order to conduct our business according to law? . . . Presumably, the appellants were convicted of agreement, not of the particular operations alleged to constitute agreement. Yet, on the Government's theory, continuation by more than one of the appellants of the operations alleged is evidence of a further Sherman Act agreement. . . . If this is so, how is Liggett & Myers to carry on? Must it start all over again with new management, with a new system? Is everything the appellants do illegal, or evidence of illegality, if done by more than one of them?¹¹

Since neither the prosecution nor the courts provided an answer, the major tobacco companies have themselves done so; namely, to follow essentially the same cigarette price policies since the trial that they followed before. The evidence upon which the *Tobacco* decision was based extended only through July, 1940. Effective July 1, 1940, the three major cigarette companies had increased their list prices by identical amounts from \$6.25 to \$6.53 per thousand cigarettes to take account of an increase in the federal cigarette tax from \$3.00 to \$3.25 per thousand. As a result, their net realized price after discounts to wholesalers (10 and 2 per cent) and federal tax was virtually unchanged (dropping from \$2.512 to \$2.509 per thousand). Although the price history of the industry since 1940 has been dominated by price controls, the recent behavior of cigarette prices is of considerable interest. On December 27, 1941, American raised the list price of Lucky Strikes from \$6.53 to \$7.10. This represented the first time since the period of virtual list price identity began in 1923 that American had attempted to lead upward in a price change although it had twice led downward in 1933. Reynolds and Liggett and Myers refused to follow, however. Whether their failure to do so was the result of their unwillingness to recognize American as the price leader is impossible to determine because of two other important factors in the picture at that time. First, the three companies had just filed an appeal to the unfavorable district-court verdict which had been largely based upon identity of price behavior. Second, Price Administrator Henderson immediately asked American to rescind its increase pending investigation of the increased costs by which the increase was allegedly justified. When American refused unless formally ordered to do so, the OPA on December 30 froze all cigarette prices at their December 26 levels, although it permitted the list prices of the economy brands to be raised from \$5.05 to \$5.15.¹²

Although the price ceilings on the economy brands were gradually

¹⁰ In the Supreme Court of the U. S., October Term, 1944, No. 840, *Reynolds v. U. S.*, Petition for Writ of Certiorari, pp. 12-13. Cf. *ibid.*, *Liggett and Myers v. U. S.*, pp. 5, 26.

¹¹ In the Circuit Court of Appeals, 6th Circ., Brief on Behalf of Liggett and Myers, *op. cit.*, p. 27.

¹² *Business Week*, January 3, 1942, p. 8; 7 *Federal Register* 1322.

raised, OPA did not permit any increase in the prices of the standard brands (except one to compensate for the increase of \$0.25 in the federal tax on November 2, 1942) until April, 1946. As a consequence, the net price to the major companies, after discounts and federal tax, remained virtually constant at \$2.51 from January, 1937, to April, 1946. During this same period, with rapidly rising manufacturing costs, the three companies' net incomes as a percentage of their net worths (after deducting book value of good will) fell from 15-20 per cent to 9-11 per cent. On April 26, 1946, OPA raised the price ceilings on standard and economy brands to \$7.09 and \$6.10, respectively.

On July 1, 1946, existing price controls expired and the new act of July 25 exempted tobacco products. On July 30, Liggett and Myers announced a price increase of \$0.22 per thousand on Chesterfields, but rescinded it retroactively a week later when other manufacturers refused to follow.¹³ Thus, in its first attempt since the dissolution to lead in a price change, Liggett and Myers was unsuccessful. That the other companies did not follow may have reflected their unwillingness to concede a position of price leadership to Liggett and Myers. On the other hand, fear of adverse public opinion in the turbulent days of mid-1946 may have been a factor. On October 7, however, American raised the price of Lucky Strikes from \$7.09 to \$7.38. Liggett and Myers' Chesterfield followed upward by an identical amount within a day or two. Finally, on October 11, after most other manufacturers had also followed American's lead, Reynolds increased the price of Camels to \$7.35, three cents per thousand below the other major brands. This minute price differential was sufficiently unique to attract considerable notice in the press. With this minor exception, all standard brands were apparently raised to an identical higher list price.¹⁴

On July 28, 1948, American again led in a price increase from \$7.38 to \$7.78. All of the other major companies followed within twenty-four hours, the prices of Camel and Philip Morris being raised to \$7.75 and \$7.79, respectively. It is believed that Chesterfields were raised to \$7.78. Up to the present time, however, the writer has not been able to obtain the exact list prices of the other major brands (including Chesterfield), but he is certain that they were raised by almost identical

¹³ *Wall Street Journal*, July 31, 1946, p. 14; *ibid.*, August 6, 1946, p. 4.

¹⁴ These price data are from the *Wall Street Journal* (October 8, 1946, p. 14; October 9, 1946, p. 4; October 12, 1946, p. 2), which reported that the following other brands were all raised to \$7.38: Pall Mall and Tareyton (American); Old Gold (Lorillard); Philip Morris (Philip Morris), increased the same day as Lucky Strike; and Rameses (Stephano Bros.). Marvel (Stephano), a leading economy brand, was also increased from \$6.10 to \$6.40. The price changes on Brown & Williamson brands (Raleigh, Kool, Wings) were not listed.

amounts.¹⁵ Insofar as price differences among the standard brands do now exist, it is obvious that they are of no practical importance, being too small to be reflected in different retail prices. Furthermore, there have been no changes in the customary discounts to wholesalers. Hence, even though very minor price differences may have resulted from the *Tobacco* decision, they are significant only as a means of attempting to avoid the absolute price identity there condemned. In fact, with the minor exceptions noted, the list prices, terms of trade, and timing of price changes are probably more nearly identical today—if one considers all of the standard brands—than prior to 1940.¹⁶

This limited evidence supports the view that, if there was illegal conspiracy before 1940, there is still illegal conspiracy today. Furthermore, if the economic power of the three major companies combined constituted illegal monopolization before 1940, it does so *a fortiori* at the present time. Between 1939 and 1947, during which domestic cigarette sales nearly doubled, the three defendant companies expanded their share of the domestic cigarette market from 68 to more than 85 per cent. Thus, they appear to be fast approaching their position of 1931, when they sold 91 per cent of the nation's cigarettes. Meanwhile, the economy brands' share of the domestic market has dropped from 14 to about 1 per cent in the face of high consumer incomes, high manufacturing costs, and a narrowing price differential below the standard brands. As a consequence, the smaller companies which grew rapidly on economy brands during the thirties have lost much ground since 1939, their standard brands (if any) failing to share sufficiently in the shift to a higher-priced product to compensate for their declining low-priced market. Apart from Philip Morris (which has not quite held its own despite its purchase of Axton-Fisher in 1944), all companies other than the Big Three have suffered moderate to severe losses of market position since 1939. Within the Big Three, Liggett and Myers' share dropped slightly while American's jumped from 22.7 to 36.1 per cent, and Reynolds' from 23.7 to 28.8 per cent. Not since 1931 have one or

¹⁵ These price data are from the *Wall Street Journal* (July 30, 1948, p. 12; July 31, 1948, p. 2) and the *New York Times* (July 29, 1948, p. 23; July 30, 1948, p. 11). The prices of the two principal economy brands, Marvel and Wings, remained unchanged at \$6.40 and \$6.38. Attempts to verify all of these data by visits to three Chicago wholesalers were unsuccessful. All were reluctant to give exact price information. One frankly stated that the current asset value of his presence on the manufacturers' "direct lists" was at least \$5,000 and expressed fear that, if the divulgence of such confidential information were traced to him, he might be removed from their "direct lists." He therefore refused to talk.

¹⁶ Thus, during the thirties, the list prices of Pall Mall, Tareyton, Philip Morris, and Raleigh frequently differed both in level and timing of price changes from the three major brands. These differences now appear to have almost wholly disappeared.

two companies been so dominant.¹⁷ The two recent price changes suggest that American—now that it has again clearly established itself as the nation's largest cigarette manufacturer—has displaced Reynolds as the recognized price leader of the industry. It is even possible that Reynolds has voluntarily abdicated its traditional position as price leader in order that it can be certain to avoid the absolute price identity so recently condemned.

Despite the absence of any fundamental changes in their historical pattern of similar price behavior and despite their recrudescence degree of market control, the three convicted tobacco companies nevertheless appear to have followed a more moderate price policy since 1946 than that of earlier years. Net prices to the major manufacturers are now only about 33 per cent above 1939 and the Big Three's rates of profits are currently running at about 13-16 per cent (1948) as compared with 14-18 per cent in 1939 and 17-22 per cent in 1931. (Meanwhile, Lorillard's rate of profits has increased slightly to 10 per cent [1948] and Philip Morris' has fallen from 25.2 per cent in 1939 to 8.6 per cent in 1947.) This more moderate price policy is probably in part due to the Big Three's desire to fend off the existing and potential competition which they found so unexpectedly strong in the thirties. Apparently such price policies—in conjunction with the continued powerful differential advantage of their highly-advertised brands—promise to maintain or increase the Big Three's market control where the more grasping price policies of the past failed to do so. Undoubtedly, present cigarette prices also still reflect to some extent the long period of controlled prices. Finally, because of the legal doubts which it cast upon the whole fabric of traditional cigarette price policies, recent antitrust action should probably receive part of the credit for these more

¹⁷ The following table summarizes the relevant data by companies:

Company	Cigarette Sales (Billions)			% Total Tax-Paid Cigarette Production		
	1931	1939	1947	1931	1939	1947
American	46.1	41.1	121.6	39.4	22.7	36.1
Reynolds	33.3	42.8	94.7	28.4	23.7	28.1
Liggett and Myers	26.6	39.0	69.0	22.7	21.6	20.5
Philip Morris	0.4	12.6	23.0	0.3	7.0	6.8
Lorillard	8.2	10.2	14.6	7.0	5.7	4.3
Brown & Williamson	0.3	19.1	11.0	0.2	10.6	3.3
Stephano	0.1	6.0	1.2	0.1	3.3	0.4
Axton-Fisher	0.8	4.3	—	0.7	2.4	—
Larus	0.3	2.3	?	0.2	1.3	?
Miscellaneous	1.0	3.3	1.7	1.0	1.7	0.5
Total tax-paid production	117.1	180.7	336.8	100.0	100.0	100.0
Big Three	106.0	122.9	285.3	90.5	68.0	84.7
Economy brands	0.4	25.6	2.7	0.0	14.2	0.9

The 1931 and 1939 data are compiled or computed from *Record on Appeal*, Exhibits No. 638, 702, 677, 428, 293, 437, 1268, 1265, 1266. The 1947 data (domestic sales only) are estimated from *Business Week*, January 17, 1948, p. 42.

moderate prices. If so, however, until effective remedial action is taken, the Antitrust Division's victory at best may have brought somewhat lower cigarette prices (at least in the short run) at the cost of that increasing concentration of economic power which it so much abhors. With this possible exception, the current history of the tobacco industry suggests that the widespread conviction of oligopolistic industries, though now legally possible, will produce only relatively unimportant economic consequences unless accompanied by measures to change the underlying industrial structure which makes the condemned behavior almost inevitable. Thus the difficult problem of evaluation and prescription in the public interest still remains.

The Problem of Remedial Action

The Antitrust Division has certainly not been unaware of the need for remedial action in the tobacco industry. In response to warnings from the Department of Justice following the 1946 decision, the convicted companies claim to have made changes in their policies which eliminate the possibility of further violations of the antitrust laws. That the Antitrust Division has not yet been convinced is indicated by the fact that, during the last year, it has held several conferences with the three companies to consider the terms of a proposed consent decree.¹⁸ I am extremely skeptical, however, about the efficacy of any consent decree which falls short of dissolution. And even with the bargaining strength which its recent successful criminal action gives the Division, we can hardly expect the companies to agree to dissolution in such an out-of-court settlement. Yet in the civil suit recently instituted against the four major meat packers, the Division reveals that it considers dissolution the appropriate remedy for oligopoly. In this suit, patterned in detail after the *Tobacco* decision, the Division seeks dissolution of the four principal firms into fourteen companies.¹⁹ Why, then, has not the Antitrust Division brought a civil suit seeking dissolution of the major tobacco companies?

I suspect that the principal reason, apart from the need for economizing resources, is that the Division recognizes the difficulties involved in formulating a dissolution plan for the tobacco industry.

¹⁸ R. J. Reynolds Tobacco Co., Prospectus on an Issue of Debentures, September 29, 1948, pp. 27-28.

¹⁹ In the Dist. Ct. of the U. S., Northern Dist. of Ill., Eastern Division, *U. S. v. Armour, Swift, Cudahy, and Wilson*, Civil Action No. 48C 1351, September 15, 1948. The complaint alleges that, as a continuing offense since 1893, the four defendants have (1) refrained from competition among themselves by market sharing (constant percentages) in the purchase of livestock and the sale of meats, and by identical cost-figuring, prices, and terms of trade for both livestock and meats; (2) restrained competition by independents through the formulation of policies which the latter were urged to follow; and (3) excluded competitors by purchase or by resisting expansion of independents. As relief, the government asks (1) that each defendant be enjoined from following each of the practices complained of and (2) that Swift and Armour each be dissolved into five companies, and Cudahy and Wilson each be dissolved into two companies.

Each of the three companies has three to four cigarette manufacturing plants which could be made into separate firms. Furthermore, it is almost certain that the principal economies of scale, beyond those of the individual plant, are those of advertising and market control; hence are private rather than social. Nevertheless, there are at least two important barriers to dissolution. First, each of the three firms has concentrated wholly (Reynolds) or largely (85 per cent or more) upon a single brand of cigarettes. Since a single brand of cigarettes could hardly be divided among several successor companies, the present major brands would probably have to be abolished. The original Tobacco Trust, having a multiplicity of brands, did not present this difficulty to those responsible for developing the details of its dissolution. Second, the paramount importance of advertising and sales effort in the industry cannot be overlooked. As Jones once pointed out, the dissolution of the Tobacco Trust "led to a duplication of selling organization and an increased overhead expense; and the result was a general *increase* in selling costs." Between 1910 and 1913, the selling costs of the successor cigarette companies increased by 85 per cent, and the advertising expenditures more than doubled, in comparison with those of the Trust.²⁰ True, the dissolution ushered in a decade of innovation and price competition which was strongly in the public interest. Thereafter, however, the industry settled down into a pattern of non-price competition which it is doubtful that even a second dissolution could fully avoid. In other words, the cigarette industry is of such a nature that competition, at best, must continue to have important imperfections. Nonetheless, despite such difficult problems as these, a workable plan of dissolution could probably be devised upon the basis of a careful study of the structure of the tobacco industry.

Whether or not dissolution is resorted to, however, supplementary techniques should not be ignored. Although lying outside of the limits of antitrust action, two other measures deserve consideration as means of encouraging competition in the tobacco industry. First, a sharply progressive tax might be imposed upon the individual firm's total expenditures for advertising. Ideally, the tax should apply only to advertising expenditures greater than those already being made by firms of intermediate size, thereby permitting small firms to expand their advertising outlays somewhat but forcing the largest firms to curtail theirs considerably. Such a tax should go far toward eliminating the overwhelming advantage which large-scale advertising gives to giant firms, both in holding their market position against existing small firms and in limiting the entry of new firms. If clear limits were established on the extent of advertising, resort to price competition should also be encouraged. The great practical obstacles to this proposal are obvious.

²⁰ Eliot Jones, *The Trust Problem in the United States* (1922), pp. 40-44.

First, since such a tax might have to apply to all industries nondiscriminately, it would be difficult to make due legislative allowances for important differences between industries in the absolute and relative levels of advertising costs. Second, insofar as large firms lost business as a result of the lower advertising expenditures caused by the tax, a question of constitutionality under the "due process" clause might be invoked. Third, one could hardly expect the press and radio to support such a tax with enthusiasm or complete objectivity. Nevertheless, this proposal does center attention upon one of the key problems involved in introducing a modicum of competition into industries—such as tobacco, liquor, drugs, cosmetics, etc.—which rely heavily upon advertising.

A second measure for encouraging competition in the tobacco industry would be the sharp reduction or elimination of the federal and state cigarette taxes. These taxes have now reached so high a proportion of the final retail price as to make price competition among cigarette manufacturers almost prohibitive. Thus, at the present time, in a state levying a three-cent-per-package cigarette tax in addition to the federal tax of seven cents, a manufacturer would have to cut his final net price by about 15 per cent to lower the retail price by 5-6 per cent (or one cent a package). Since distributing margins are very small, the elimination of the cigarette tax would bring these two percentages very close together and make price competition among manufacturers much more attractive. Valuable though cigarette (and liquor) taxes may be as a lucrative source of governmental revenues, that they strongly foster monopolistic price policies has been almost wholly overlooked. It is true that, in the short run, the elimination of such taxes might simply increase the monopoly profits of the major firms. But the long-run result would probably be strong encouragement of entry and price competition, especially if combined with the advertising tax previously mentioned. If cigarette taxes are not eliminated, however, at least they should be based upon value rather than quantity of product. The present flat tax per thousand cigarettes is inexcusably burdensome upon the economy brands, which are the only real element of price competition in the industry. While a graduated tax, based upon two or more price classes, has been frequently proposed, it has never met with Congressional favor.²¹ Far better than such a graduated tax would be a straight ad valorem tax which would encourage a full continuum of possible prices, thereby helping to undermine the present pattern of virtual price identity for both standard brands and economy brands.

²¹ See, for example, Senate Committee on Finance, 73rd Cong., 2nd sess., *Hearing on Reduction of Tax on Cigarettes*, 1934. In December, 1948, the House Select Committee on Small Business recommended to Congress "a graduated ad valorem rate of tax" on cigarettes (80th Cong., 2nd sess., House of Representatives, Select Committee on Small Business, *Report on Problems of Small Business Resulting from Monopolistic and Unfair Trade Practices*, pp. 10-11 and 26).

In spite of its apparent reticence to dissolve the major cigarette companies, the Antitrust Division may be expected to use dissolution proceedings much more frequently in the future than it has previously done. Unfortunately, drastic though it may be, dissolution appears to be the only really effective remedy for oligopoly which lies within the limits of antitrust action per se. If the current suit against the meat packers is indicative, the Division may even be launching an unprecedented drive toward atomization of American industry. The economic consequences of such remedial action, if generally executed,²² would certainly be far-reaching. Whether they would always be in the public interest as well is less easy to foresee. The danger is that the well-known antibigness bias of the Antitrust Division will lead to an overzealous disregard for economies of scale and other basic economic realities in at least some of its dissolution proposals.

Conclusion

The *Tobacco* case is clearly a legal milestone in the social control of oligopoly. By permitting the inference of illegal conspiracy from detailed similarity of behavior and by shifting attention from the abuse of power to its mere existence (as indicated by degree of market control), the courts have at last brought oligopolistic industries within reach of successful prosecution under the antitrust laws. This is all to the good. The economic consequences will depend, however, upon whether government victories are accompanied by appropriate remedial action. If they are not, such victories will be nearly futile. On the other hand, if remedial action is taken, the Antitrust Division must assume a new and heavy responsibility to restrain the narrowly punitive spirit to which its antibigness bias so easily leads; and to prescribe remedies solely with a view to their contribution to the public interest, broadly conceived and based upon thoroughgoing economic analysis. Although the courts now may have largely abandoned the "rule of reason," the Antitrust Division—in deciding what industries to prosecute and in preparing appropriate corrective measures—must develop a "standard of reasonableness" of its own if the public interest is to be properly served. Finally, it must be recognized that other legislative reforms—though lying outside the bounds of antitrust action—can do much to supplement or complement the antitrust laws in attaining the goal of a more competitive economy.

The *Tobacco* case is indeed a legal milestone. Whether it will be an economic milestone—or millstone—will depend upon the judiciousness with which its doctrines are applied. Certainly, the law and economics alike should combine their best efforts in meeting the new challenge which the *Tobacco* decision has so forcefully laid down.

²² Even if the Division should meet with success in the courts, however, widespread dissolution proceedings (because of their drastic nature) would be not unlikely to lead to countermanding legislation by Congress.

THE CEMENT CASE

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In considering the economic consequences of the decision outlawing the multiple basing point system it is well to keep in mind that the objective of the Federal Trade Commission was to secure "individualistic action" by sellers. While the Commission is hardly so naïve as to think that the result of the decision will lead to pure competition in the cement and steel markets, it is difficult to distinguish in the case of a highly standardized product between "individualistic action" and pure competition. When a seller cuts his price without thought for his rivals the results are those of pure competition. The fundamental issue consequently is whether the court order is going to lead to such individualistic action. How we answer this question depends on how we explain the "concerted action" the court claimed existed in the cement industry. If it is seen as merely the result of producers conspiring to achieve monopolistic profits we may think that the prohibition of the conspiracy may restore individualistic action.¹ If, however, the concerted action as defined by the court is seen to be the outcome of a market situation where there are a relatively small number of producers² each considering his rivals' possible reactions to a change in his policy, the particular manifestation of the group relationship, namely, the basing point method, is quite unimportant. Regardless of what the court orders in this latter case, individualistic action is not likely.

The prohibition of the multiple basing point system rests upon the allegation that it was made possible only by a variety of activities resulting through concerted action. Even if it is granted that these activities may have been associated with concerted action, they constitute manifestations the economic theorist would expect to find in the oligopolistic situation. Nothing in the order shows how sellers can be prevented from recognizing their mutual dependence. If the resulting prices were monopolistic, it still need not follow that this "system of quoting prices at the destination is necessarily inimical to the interest of consumers,"³ since the only feasible alternative might involve ar-

¹ See *F.T.C. v. The Cement Institute et al.*, 333 U. S. 698 (1948), where it is said that the "agreement" had to be restrained in order "to restore individual freedom of action among the separate units in the cement industry."

² The court said that in the cement industry, "ten companies controlled more than half of the mills and there were substantial corporate affiliations among many of the others. This concentration of productive capacity made concerted action far less difficult than it otherwise would have been." (*Ibid.*, p. 713.)

³ See *Wall Street Journal*, October 17, 1948, p. 6.

rangements more costly to the public. Thus it is not only necessary to show that monopoly exists but that there is some practical competitive alternative. It is often easy for economists to forget that their simple comparisons of monopoly and competitive output found in the textbooks depend upon unrealistic assumptions of identical cost and demand functions. Since in many of the major industries minimum costs are achieved at a relatively large output compared to the total demand for the product, there is obviously no competitive alternative. Consequently, any attempt to achieve individualistic action by law is on the same level as playing tennis with imaginary tennis balls.

Arthur Smithies has observed that "a monopolist would never adopt a basing point system, since he could always increase his profits by leaving the pricing pattern unchanged and eliminating cross-hauling."⁴ The principal purpose of collusion then is not to establish a "basing point system, but to abolish it."⁵ Following this line of reasoning, the existence of a basing point system constitutes *prima facie* evidence of competition.

I will consider, first, the consequences of the tests used to support the charge of conspiracy and, second, the consequences of the proposed alternatives to the basing point system.

I

1. *Discrimination.* Industries using the basing point system are usually dealing with a highly standardized product produced by a relatively small number of firms whose average costs are substantially in excess of the out-of-pocket cost for most of the range of output.⁶ Because of this difference between average and marginal cost, the firms are ordinarily under tremendous pressure to reduce prices to secure greater volume. The other two factors, however, are generally sufficiently strong to prevent price reduction below a certain minimum. Consequently any individual action on prices is usually secret.

In order to expand its sales, the firm will therefore have to sell abroad at a freight disadvantage. If all firms and all markets are alike, there seems to be no reason why a firm should do this. Smithies has remarked that because markets are not identical, freight absorption is profitable, since if "the competitors were identical it would be a simple matter to negotiate an agreement for the profitable abolition of the system."⁷ Even if cost and demand functions were identical over the

⁴ Arthur Smithies, "Aspects of the Basing Point System," *American Economic Review*, December, 1942, p. 706.

⁶ *Ibid.*, p. 712.

⁷ See J. M. Clark, "Basing Point Methods of Price Quoting," *Canadian Journal of Economics and Political Science*, November, 1938, p. 478.

⁸ Smithies, *op. cit.*, p. 720.

long run the uneven effects of the business cycle might make it temporarily profitable for mills to absorb freight.

The variable mill net arising from freight absorption is said to constitute discrimination, and therefore monopoly on the grounds that a competitive seller would tend to concentrate his sales in the market offering the greater mill net; i.e., the home market.⁸ This is not permitted under the basing point system because of concerted action to maintain prices. But it is implicitly assumed in this connection that the seller by reducing his price can drive his competitors out of his home territory. Yet where the out-of-pocket costs are relatively low, the invading seller will immediately meet the low price. It could also be argued, as Smithies suggests, that a monopoly in the same circumstances would not rationally discriminate either.⁹ What is the sense of concerted action with all the resulting antitrust investigations if the so-called "monopolistic" advantages are to be completely dissipated in freight absorption?

It is alleged that competition is injured when buyers cannot reap the full advantages of their location. The steel and cement producers answer that they, too, have locational advantages and they should not be expected to reduce prices in their home markets where they have a freight advantage. Granting that the seller may secure some advantages in exploiting his location, the initial cause of the discrimination is not here, but in his oligopolistic relationship. The base prices might be set at some theoretically determined competitive minimum and it would still be more profitable to penetrate other markets rather than to decrease the base prices. It is not always necessary that a seller should absorb freight, as, for example, in good times when the local market is more than sufficient to secure full utilization of capacity.

By objecting to spatial discrimination the Commission hits at what may be the only sort of competition possible in markets where freight costs are relatively important. In a sense it seems to be going against the modern tendency toward reducing the importance of distance. It is noteworthy that the development of the railroads and motor transportation has had its principal significance in reducing the advantages of location. The basing point method has tended to accomplish the same thing by permitting market penetration. In breaking away from the distance principle, the steel and cement mills have followed the same reasoning as the railroads. Any business yielding more than the out-of-pocket cost pays. In other words, the economic advantages of

⁸ See the note by Saul Nelson where he says, "This line of reasoning verges on pure semantics. In part it reflects too narrow a concept of price! Defining it purely from the point of view of the seller and ignoring that of the buyer." "Basing point problems: Comment," *American Economic Review*, September, 1943, p. 621.

⁹ *Ibid.*, p. 706.

securing full utilization outweigh locational factors and therefore the use of a uniform pricing system.

After all, the results of spatial discrimination are no worse than that of producing several products and arbitrarily allocating overhead costs in line with the different market prices. It could just as well be argued that competition is incompatible with a multiproduct firm since the latter could sell all it wanted of any one product.

While the Commission holds that freight absorption as such is not prohibited, the decision states that competition does not mean that a seller is permitted "to use a sales system which constantly results in his getting more money for like goods from some customers than he does from others."¹⁰ Discrimination for all practical purposes is therefore barred.¹¹ Mr. Corwin D. Edwards, of the Federal Trade Commission, stresses the fact that the courts "have given weight to the point that the defendants not only reduced prices where a competitor's price was lower, but also raised prices where the basing point formula called for an abnormally high price."¹² Certainly, if the objective is the elimination of discrimination, what else should a seller do when the nearest mill increases its price, since by accepting the new price, the spread between the mill nets is reduced? Apparently the only permissible meeting of competition is the sporadic type possible where there are a large number of buyers so that the loss of any one buyer is relatively unimportant. The Commission is reasoning in a circle here, since, while it initially argued that "systematic discrimination" represented monopoly, it now argues that discrimination to meet competition is not illegal except within the framework of "concerted action." Yet, one of the proofs of concerted action is "systematic discrimination!"¹³

The basing point method with its resulting discrimination has the following advantages:

- a) The seller may exercise discretion in deciding whether to penetrate distant markets; i.e., he need not discriminate.
- b) If he need take no loss on his local sales he is more likely to experiment with distant or new markets.
- c) His freight absorption may be profitable to his local customers

¹⁰ *F.T.C. v. The Cement Institute, op. cit.*, p. 725.

¹¹ Mr. Benjamin Fairless, of the United States Steel Corporation, comments that "it is unreal to suppose that these subsidiaries can market satisfactorily more than 50 thousand tons of finished steel each day throughout the year without the use of a standard merchandising method fully understood by both buyers and sellers." *Wall Street Journal*, July 7, 1948, p. 2.

¹² Statement on "Basing Point Systems," *Technical Seminar, Dept. of Commerce* (Washington, D.C., August 4, 1948), p. 3.

¹³ The Court said this "difference in the producer's net return from sales to customers in different localities under a 'delivered price' system is an important element in the charge under Count 1 of the complaint" (i.e., "the restraint of competition . . . by means of a combination . . . made effective through mutual understanding or agreement to employ a multiple basing point system of pricing") (*F.T.C. v. The Cement Institute, op. cit.*, p. 697).

in that by permitting greater utilization when the local market is in a slump, average costs may be lowered. It is not necessary either that freight absorption should occur throughout the business cycle or that it should involve crosshauling.

d) By a stable and orderly marketing system, risks are reduced so costs may be less over the long run.

e) Buyers and sellers not only want price stability but they want to know what their rivals are paying and charging. The information is available under the basing point system.

f) The customer has alternative sources of supply which are important if high quality performance is to result. Otherwise, why should customers buy from distant manufacturers?

g) Neither customers nor markets are homogeneous with respect to the size and continuity of purchases. The Commission is correct in asserting that a competitive mill will not sell in a distant market when local demand exceeds capacity only on the assumption that all customers are alike.

2. *Punishment of Unco-operative Sellers.* This may be accomplished by boycotts or by the larger sellers invading the recalcitrant sellers' home territory and "dumping." It is to be noted that if the recalcitrant did nothing more than either announce himself as a new basing point or reduce his base price, the others have no alternative in the case of a standardized product but to follow his price reduction, if they expect to continue selling in that market. If, however, the recalcitrant had not reduced his local price, the others are no worse offenders than he was initially. If he reduced secretly, he must expect retaliatory measures in his own market. If he openly reduced in his rival's markets, they are certainly justified in reciprocating. The objection is not to the reduction in his base price but to secret concessions at their expense.

3. *The Identical Delivered Price System.* The court contended that even if competition led to identical prices, "the desire to sell will sometimes be so strong, that a seller will be willing to lower his price and take his chances."¹⁴ Not only has this happened but there is nothing within the basing point system that prevents it. The delivered price system, when it is functioning perfectly, requires each seller to decrease his prices openly. The lower price would be available to all buyers and not just to the few who are in a good bargaining position. In this sense, it is antidiscriminatory. It is not so much whether the seller can reduce his price, but whether he will find it in his interest to do so. The court's view of competition is naïve. In an oligopolistic situation a seller does not "take his chances openly"; therefore, the results are secret price concession and punitive action.

¹⁴ *F.T.C. v. The Cement Institute*, *op. cit.*, p. 716.

In the usual oligopolistic market there are usually some powerful buyers exerting continual pressure for smaller prices. In a depression, the loss of any one of these buyers might well be the difference between profit and loss. Unlike the purely competitive market, the loss of such a buyer is not a matter of indifference. Because it is not easy to replace such a buyer, the seller must therefore be constantly informed as to the state of the competition he must meet to maintain his sales. Without some stability and knowledge of price, both buyers and sellers must face considerable uncertainty.¹⁵ The concerted action resulting in the use of common freight rate books and "arbitrary switching charges" is just as necessary a rule for the functioning of competition in certain markets as the agreements as to grades in agricultural commodity markets. Surely no one would charge that grading makes the wheat market monopolistic. The basing point method no more prevents price reduction than does the grading of wheat prevent the development of new grades. Not all collusive action is monopolistic in intent or effect. In fact, many of the rules and procedures arrived at through concerted action are the *sine qua non* of any market.

4. *Non-price Competition.* It is held that competing firms would not be likely to maintain their prices in the face of a large fall in demand, and that they certainly would not happily hit on the same moment to change their prices. But unless atomistic competition is to be forced on the industry by new legislation, oligopolists are compelled to follow any price reduction as soon as it is announced. Consequently, competition is forced into non-price areas, since price reductions do not lead to competitive advantages. If the basing point system were really monopolistic, it would be difficult to understand why non-price competition should occur, since its only objective can be the redistribution of market shares. The seriousness of non-price factors has been sharply illustrated in the recent establishment of the f.o.b. price system. Many local buyers have been forced to accept delivery on the seller's terms, with all the delays, poor quality, and lack of service usually associated with monopoly. While it is true that the buyer may buy from more distant sellers at higher prices, such crosshauling would represent no improvement over the basing point method.

¹⁵ As one businessman puts it, "Since the court decision last spring contractors have been unable to ascertain at the time of bidding just what their cement cost will be." (*Wall Street Journal*, November 19, 1948, p. 3.) "Further," he said, "it is now extremely difficult to obtain a firm price or any definite commitments as to delivery." Eventually such information will be available but the relevant issue is, will it be associated with less or more concerted action than under the basing point system? The lack of such commitments and the differences in prices under the present f.o.b. system demonstrates to a remarkable extent that price differences rather than being a proof of competition represent monopoly or monopolistic competition. This is exactly what the theory of monopolistic competition would lead us to expect.

In summary, it appears that the various activities used by the Commission to support its conspiracy charge are no more compatible with monopoly than with competition. Where transportation costs are incurred, the issue is not the monopoly power arising out of the locational advantage but the type of competition that is possible. While the Court is satisfied that the Commission has shown that the various marketing arrangements in the cement industry constituted "an effective instrument which . . . would result in complete destruction of competition and the establishment of monopoly,"¹⁶ economists would generally hold that this way of putting the issue is "barren."¹⁷ Most actual situations combine both competitive and monopoly elements so that it is very doubtful if the prohibition of any particular pricing arrangement is going to significantly change the underlying economic structure of any industry.

II

Now what are the consequences likely to follow from the decision?

1. *Extent of Freight Absorption.* Due to the seller's market, higher delivered prices have resulted as sellers have merely shifted the freight costs on to the buyer. While there have been any number of hardships the general effect on sellers has not been significant because "freight absorption has not been as heavy as in normal market conditions."¹⁸ For obvious reasons there is little point in absorbing freight in a seller's market except to maintain connections with important buyers. Undoubtedly the large increase in railroad rates has also been a factor. If, however, the long awaited recession ever arrives and rail traffic falls, the railroads may find it expedient to reduce their rates. On the principle of securing any traffic yielding a value greater than the out-of-pocket cost, they may have no alternative but to equalize the delivered prices of customers not now favorably located relative to their sources of supply. If such were the case the effect of the Supreme Court's decision would be largely nullified.

2. *The Uniform F.O.B. Mill Price System.* If the burden of transport costs is not assumed by the carriers, each mill or those mills concentrated in a particular area will after a time find its natural market.

¹⁶ *F.T.C. v. The Cement Industry, op. cit.*, p. 721.

¹⁷ See A. Smithies, *op. cit.*, p. 706, where he says the abolition of the basing point system and the requirement of f.o.b. mill pricing "would merely substitute one form of imperfect competition for another." Mr. Saul Nelson comments: "It is unfortunate that so large a proportion of the literature on this issue has proceeded in terms of inadequately defined epithets such as 'competitive,' 'monopolistic,' and 'discrimination' rather than with reference to the realities of the market place, so that at times the whole controversy has appeared to belong more in the realm of semantics than of economics." *Op. cit.*, p. 620.

¹⁸ *Wall Street Journal*, July 13, 1948, p. 3. Benjamin Fairless, of the U. S. Steel Corporation, also observed that "it is not likely . . . there will be any effect on the producers during a period of high demand as at present." *Wall Street Journal*, July 9, 1948, p. 3.

Up to the level permitted by the cost of transportation from the nearest alternative source of supply, each will have a local monopoly. Whether there is but one or several producers, the price will probably be the same since mutual self-interest will prevent each from pursuing an independent policy. Since the Commission refuses to recognize any basis other than distance for price differences, competition in the sense of alternative sources of supply can only occur at the peripheries of each market. Where there is but one seller at each location, the quality of service may deteriorate. The so-called "waste" of cross-hauling must then be weighed against the disadvantages of being restricted to but one source of supply.¹⁹ Any attempt by buyers to purchase from distant mills will lead to a restoration of the much maligned crosshauling. It is pertinent to note in this connection that crosshauling will arise from the buyer's willingness to pay a greater delivered price, while under the basing point system the buyer would be given alternatives at the local mill's delivered price and at the discretion of the variously located sellers.

In areas where capacity considerably exceeds demand it would appear that the mill prices would have to be considerably reduced for mills to reach distant markets. If at such prices average costs could not be covered, some migration might be necessary. But before this occurs, some one must reduce prices. Is it at all likely that Chicago mills will accept Pittsburgh leadership, for example, in the case of steel? If they meet Pittsburgh's reduction, the market boundaries will not shift in favor of Pittsburgh. If, however, they accept Pittsburgh's leadership, they are in effect returning to the "Pittsburgh-plus" system. If production costs differ by less than the transport costs, "phantom freight" arises. Smithies has correctly observed that the existence of nonbasing point mills is proof that the basing point system reduces prices, since the only reason for accepting a distant mill's price is that it is below what the nonbasing point mill would charge if left to itself.²⁰ If such a mill wanted to charge a lower price it would become a basing point.

Given a sufficient period of time it might pay mills at Pittsburgh to move to Chicago or Chicago mills to expand capacity. In either case,

¹⁹ Smithies observes that while crosshauling may be uneconomic, "consumers may benefit more, through lower costs from asymmetrical situations which the basing point system permits than from the symmetry that a uniform f.o.b. mill rule would require." *Op. cit.*, p. 724. Cf., also, the following: "Cross hauling has long bothered some observers of the economic scene as a waste and various proposals have been made to deal with it. The case against it is plausible. But it becomes less plausible when one reflects that abolition of cross hauling would put the consumer at the mercy of his nearest manufacturer; the man in Rochester would buy a suit in Rochester—or wear a barrel—and the man in Chicago would buy a suit made there." (*Wall Street Journal*, October 7, 1948, p. 6.)

²⁰ Smithies, *op. cit.*, p. 723.

when Pittsburgh surrenders its Chicago market, its mills could raise their local prices since they no longer have to meet the lower Chicago delivered prices. In markets where there is but one seller, the price will be set just under the umbrella provided by transport charges. In this case, the only difference from the basing point system is that sellers rather than paying the transport costs receive the revenue formerly going to the railroads! Other things being equal, it is likely that his pricing will be low enough to keep newcomers out, but it is possible that the quality of service will deteriorate. Since oligopolists whether under a basing point or f.o.b. method are not acting in an individualistic manner, there will probably be no radical shift in their pricing methods. The effect of the decision on prices will depend rather on what happens to supply in the various areas rather than on any sudden increase of monopoly power.

If discrimination is not permitted and demand increases beyond capacity of the local mill, consumers must pay the transport costs from the next available source of supply.²¹ Because of competition among buyers, it is not just the marginal buyer who must pay the greater delivered price necessary to attract additional supplies, but all buyers. It is dubious whether desperate buyers lacking knowledge of alternative sources of supply can be more effective in securing the best utilization of existing capacity than discriminating sellers anxious to find any business yielding a revenue in excess of out-of-pocket costs. In order to prevent distant buyers from paying a smaller mill net, it appears that it is necessary to make intramarginal buyers pay more to attract additional supply into the area. It is not likely that the individual buyer will have either the sources of information or the necessary skill to ferret out sources of excess capacity in the way that the individual seller can supply distant markets under the basing point system. Since it is by no means certain that this supply will be forthcoming, the entire effect of the increase in demand may be spent in raising prices. One may well ask whether the smaller mill net received from distant buyers imposes on the intramarginal buyer a greater injury than the additional amount they must pay every time demands exceed local capacity.

3. *Heterogeneity among Buyers.* Under the basing point system, connections could be established in distant markets without reducing the local price. Freight absorption was profitable because of the differences among buyers with respect to the size and continuity of their purchases.²² On the other hand, large buyers, not wishing to be de-

²¹ Cf. Saul Nelson, *op. cit.*, p. 620.

²² Gardiner Ackley states that "the majority of those who have dealt with the problem of spatial competition have assumed that buyers were evenly spread over the market territory." (*Quarterly Journal of Economics*, February, 1942, p. 212.) But demand, in

pendent upon any one source of supply, have tended to distribute their purchases between local and distant producers. The distant suppliers must now decide whether the size of the order from the large buyer justifies the smaller mill price necessary to reach that market. In many cases the answer may be in the negative; so that the buyer is left with but one alternative, unless, of course, he wishes to pay the additional freight necessary in buying from distant localities. Or he may instead either buy or build his own plant so that the order prohibiting the basing point method may paradoxically lead to larger and more integrated firms.

4. *Flexibility of Supply and Prices.* It has been suggested that in areas of surplus capacities, such as that of Pittsburgh in steel, either the mill price will be reduced in order to enlarge the market or the mills must move to the demand.²³ If the Pittsburgh mills do not think the additional sales in Chicago worth the loss on their local sales, Chicago prices could rise under the umbrella afforded by rail costs from Pittsburgh. If Pittsburgh reduced its home price, the Chicago price might be reduced in order to permit the market to absorb the additional supply coming about from Pittsburgh's entry. To the extent that Chicago consumers continue to pay transportation costs from Pittsburgh there is no gain over the basing point method. The only gain would be that accruing to the local customers of the Pittsburgh mills. If these customers are unimportant the gain to the economy is minor, and whatever discrimination existed previously was minor. If, however, the local customers are numerous, the additional revenue resulting from selling in Chicago would have to be compared to the loss on local sales. The more important these local sales, the less likely it is that Pittsburgh will reduce its price. Thus it is by no means inevitable that areas of excess supply will reduce their prices: they will only do so when the additional revenue with respect to the distant market exceeds the revenue lost in the home market. It is more than likely that prices will increase in areas of excess demand rather than prices be reduced in areas of excess supply.

In the business cycle, while the demand for heavy products fluctuates violently, those fluctuations vary between markets and products. If freight is absorbed it is possible for a mill to shift some part of the burden of its reduced demand on to other areas where the demand has not fallen as much. If discrimination is not permitted, a mill may

fact, exists in lumps. When this is coupled with railroad rate zones, it is seen that the demand curve is more of a step gradient than a continuous function. Price reductions are only apt to significantly effect sales at certain points. Both the uneven distribution of buyers and the uneven size of their orders introduces complications which are not satisfactorily treated by the existing "individualistic" theory of competition.

²³ See *Fortune*, September, 1948, pp. 78-79.

not find it profitable to reduce its price to enter its distant markets on a temporary basis since (1) its total revenue may be reduced,²⁴ (2) its buyers would face considerable uncertainty as to the future movement of prices, (3) distant mills may retaliate so that while no additional sales result total revenue is reduced. After a sufficient period of time the supply would be adjusted to the cyclical variations in demand and mills would only enter distant markets when prices are increased sufficiently to cover transportation charges. Capacity rather than responding to the national demand would be adjusted to the local demand. Since idle capacity elsewhere will not ordinarily be available, adjustment to increases in demand will be made in higher local prices. Under the f.o.b. system a firm has but one choice: to attempt to expand its market by reducing price; whereas under the basing point method it is free to choose its combination of products and markets without throwing either its buyers or rivals into disequilibrium. By insisting on uniform pricing, supply is not likely to be flexible; so that prices must increase both to ration a smaller supply and to insure the necessary profits due to the greater risks of dependence on a smaller market.²⁵

5. *Heterogeneity among Sellers.* The multiplant producer is likely to be favored by the decision. Any reduction of his price in a particular area will either force the distant single plant seller to take a smaller mill net on all his sales or drive him from the market. By virtue of their larger capital resources they may erect "plants in strategically located areas which are now served by distant plants."²⁶ As one newspaper comments: "The largest industries in the country will find ways to insure themselves the greatest possible steel supply: they can go to the steel or bring the steel to them. Many of the small ones cannot do that. What was intended to be an anti-monopoly move might have wholly unexpected results."²⁷ About all that would be left for the single plant firms would be to merge. That the Commission is not unaware of this possibility is evidenced in its efforts to make the Clayton law apply to the merger of competing corporations.²⁸

As the buyers' market develops, the multiplant firm may merely

²⁴ Cf. Saul Nelson, *op. cit.*, p. 620.

²⁵ Cf. the statement by Mr. Nelson: "There must be sufficient flexibility in the system to permit mills with unused capacity to ship into areas where demand is straining the facilities of nearby producers. The only issue is the best means of achieving such flexibility." *Op. cit.*, p. 620. See, also, J. M. Clark, "Imperfect Competition Theory and Basing Point Problems," *American Economic Review*, June, 1943, pp. 283-300.

²⁶ *Wall Street Journal*, July 9, 1948, p. 4.

²⁷ *Wall Street Journal*, July 19, 1948, p. 6.

²⁸ Walter B. Wooden, of the Federal Trade Commission, comments that "one important thing that may come out of the cement decision and its outlawing of systems of identical delivered prices is to accentuate the trend toward merger of competing corporations as an unassailable method of avoiding competition." (*Journal of Marketing*, October, 1938, p. 222.)

reduce its price in areas where demand falls off or completely shut down for considerable periods. It also could secure all the economies from specialization while selling on an individual basing point system. Consequently, the decision, while interfering with the efficient dissemination of market information, has a differential effect on the various sellers depending on whether they are chain operators or not.

6. *Location of Industry.* The uniform f.o.b. price system is not likely to cause any greater tendency toward decentralization. To the extent that both the Pittsburgh-plus and the multiple basing point system made it possible for distant firms to absorb freight, it was profitable for new firms and plants to locate near the demand and thereby secure "phantom freight." If the plants have not already moved to the market, it is unlikely that the decision will hasten any movement. If there is any sizable movement, it will probably be that of buyers moving to the areas of excess capacity.²⁹ As indicated earlier, it does not appear that Pittsburgh will withdraw from the Chicago area. If the latter is really an area of excess demand and the price elasticity is smaller than one as the industry claims³⁰ the delivered price at Chicago will rise to cover the cost of transportation costs from Pittsburgh. In bad times, any attempt by Chicago mills to exclude Pittsburgh would be doomed to failure, because of the necessity of Pittsburgh to maintain its sales. Even discrimination would be legally possible in these circumstances since it would not be "systematic."

Nor is it necessary for producers to move. They may merely concentrate on fewer lines, thereby forcing their buyers to all the inconvenience of ordering and paying the added freight from distant mills. Sellers may merely exchange their "blue chip" buyers for the privilege of specializing on certain lines. Buyers must therefore pay greater delivered prices for certain products than for others and in time they too may drop the use of the relatively more expensive products. The resulting distribution of industry will correspond to the particular specialization arrived at by the wholly arbitrary decision of producers.

Where water and truck transportation are substituted for rail, it seems inevitable that the railroads will be forced to make concessions to their unfavorably located customers. Obviously such action by the rail carriers cancels the advantages of water and truck transportation. But before objecting to this action the necessity of the railroads

²⁹ Commissioner Lowell Mason, of the Federal Trade Commission, declared that "with each producer a basing point there will be basing points in many places not now listed as such and more fabricators will group around these many places to take advantage of the lower quoted prices for basic commodities." (*New York Times*, Financial Section, May 23, 1948, p. 1.)

³⁰ See U. S. Temporary National Economic Committee *Hearings* (Govt. Printing Office, 1940), Part 26, p. 13897.

for securing the optimum utilization of their investment should be appreciated. Surely the buyers dependent on rail transportation have a right to take advantage of this need of the railroads. Their rights are no less valid than those of their competitors owning trucks or located on waterways.

III

Summary. The Federal Trade Commission's and Supreme Court's finding of monopoly in the *Cement* case is the result of an unduly narrow definition of competition. Competition in the sense of "individualistic action" which ignores mutual dependence is rarely found. It follows as a consequence that most markets are monopolistic. Such a result is due to our definition and not any "concerted action" by producers.³¹ It is equally easy to define monopoly narrowly and show (a) that the cement industry does not meet its conditions and (b) the existing practices in this industry are not compatible with monopoly. In these circumstances the purpose of "concerted action" would be the elimination of present pricing practices; viz., the basing point system.

While crosshauling and discrimination may occur, it is not necessary that they should. The "open price" system used by basing point industries merely makes them permissible. No seller is forced to discriminate; and nothing prevents his cutting price so long as he does so openly. That is, the price cut must be available to all buyers rather than those few in a strong bargaining position. In a very real sense this system is therefore antidiscriminatory. It is also essential that sellers know the conditions of competition in the various markets. Buyers are not alike in either the size or continuity of their purchases. Consequently, the loss of any one buyer, because of a secret price cut by a rival, is not a matter of indifference. In ordinary industrial markets they cannot easily be replaced.

Uniform pricing will make it unprofitable for firms to penetrate distant markets. If local monopolies develop, supply will be unresponsive to variations in demand; so that violent price fluctuations will occur. Whenever demand exceeds capacity in a particular area, the burden of securing additional supply will shift to buyers. Sellers seeking additional utilization of fixed capacity are far more efficient than desperate buyers in bringing about an efficient adjustment of supply and demand. Buyers are more likely to force prices up than to secure additional supplies. Under the now illegal basing point system additional supplies are forthcoming without any increase in price and at

³¹ See T. J. Anderson, "Note on the Rise of Monopoly," *American Economic Review*, March, 1940, p. 119.

the discretion of the seller who finds it profitable to penetrate the market.

Large integrated firms are not hit to the same extent as smaller, single-plant firms, since any regional shift in demand is canceled out by the wide dispersion of their plants. Consequently, the single-plant firms must either merge or secure rate concessions from the railroads in order to offset locational disadvantages. As business activity begins to decline the carriers may have no choice but to reduce their rates, since any business yielding a revenue in excess of the out-of-pocket costs is worth their while. Whether the smaller plants merge or secure rate concessions, the effect of the decision is largely nullified.

Economic progress has largely consisted in the expansion of the market; i.e., the reduction of the importance of particular locations or distance. The enlargement of the market for any particular firm has not only permitted the achievement of lower unit costs but has reduced risks by reducing dependence upon particular markets or buyers. Distant buyers have similarly benefited through the increase in the number of alternative sources of supply. Surely these buyers have as much right to take advantage of the large fixed investments in plant of their supplying firms as do their competitors of their more favorable location. The Commission and Court are strangely prejudiced in favor of but one type of economic advantage—location. Blind attachment to the principle of uniform pricing would have made the development of most of our heavy industry with its necessary transportation of the products of mines and farms virtually impossible.

The prohibition of freight absorption makes possible what the basing point system prevented—monopoly. Buyers no longer having alternative sources of supply will be completely at the mercy of the seller or the few sellers in their local market. Prices will consequently be higher both because of the prevention of what is the only type of competition possible where the freight cost-total cost ratio is large; and by the restriction of local capacity to local demand. The primary effect of the decision is that the local seller is insulated from competition. Since in practice most forms of competition consist principally in an increase in the number of sources of supply through the receipt of variable mill nets, I have no doubt that business will find some ways to avoid what it now considers is a disastrous decision. Why the uniform f.o.b. system should be considered less “artificial” than the basing point system is a problem in semantics, not economics.

DISCUSSION

CORWIN D. EDWARDS: These three papers have appraised the government's antimonopoly work with remarkable diversity. On the one hand, William Nicholls finds that the Supreme Court and the Department of Justice have, with surprising speed, incorporated in the law the latest economic theory about monopoly. On the other hand, Professor Adelman finds that the Department of Justice and the District Court are unable to see simple truths that would be evident to any beginner in economics; and Alfred Nicols finds that the Supreme Court is naïve and that the Federal Trade Commission argues in a circle. The agencies which enforce the antimonopoly laws are at least versatile.

Efforts at economic appraisal of legal patterns should take place often. The work is inherently difficult; for the law is a system of thought at least as subtle and complex as economics, and its concepts have evolved through a period several times as long as those of economics. It is not surprising that economists sometimes fail to understand legal concepts fully and reflect them fairly. Insofar as they cannot do so, their efforts to mate economics with law produce at best a miscegenation. There has been some of that here today.

Professor Adelman's criticisms of the theory of the A & P case were harsher than those of his written paper, and his paper, I am told, is harsher than the long thesis from which it is drawn. Accordingly, I am uncertain how far what I shall say about his position is critical and how far it serves merely to fill out a fuller statement of his views. He has purported to discuss only one aspect of the A & P case. He has omitted all discussion of predatory practices on the ground that they raise no controversy and has avoided discussing localized price cutting because it is an obviously objectionable monopoly device. Confining himself to what he regards as the weak points of the government's case, he necessarily distorts the case, for few things are clearer in the antimonopoly laws than the principle that a practice can be judged only in its setting.

In criticizing the approach of the Department of Justice to brokerage payments and allowances, Professor Adelman has ignored the peculiar status that Congress has given to such trade practices. After the Federal Trade Commission's chain store report, Congress enacted the Robinson-Patman Act, and in it forbade a seller to collect brokerage from a representative of a buyer and set up a standard of proportionately equal terms to determine the legality of sales aids and allowances. Professor Adelman's criticism would be better directed at Congressional policy than at the Department of Justice.

By selecting only those aspects of the case in which he feels that the government's position is inconsistent with the consumer interest, Mr. Adelman has oversimplified the very real problem raised by the A & P case. To make this point, I shall assume that everything he says about the usefulness of A & P's policy to the consumer is fully justified. Cheapness to the consumer, however, does not exhaust the policy of the antitrust laws. Another part of this policy is to prevent seizures of power by large companies which make small ones unable to compete effectively regardless of their efficiency. In many cases,

the interests of the consumer and little business are parallel. In the A & P case, they may be partly opposed. Had Professor Adelman pushed his breakfast food illustration further, this point would have become clear. Perhaps, by A & P's action, the manufacturer's product was made cheaper to the consumer both in A & P's stores and in independent stores. But, obviously, the manufacturer's price to A & P was reduced further than his price to independent distributors. Thus deprived of an equal start, these independents were handicapped in competition, perhaps decisively; and the handicap was not due to A & P's superior efficiency unless one means by efficiency merely being large enough to have bargaining power derived from ability to threaten to make one's own supplies. Threats to little business incident upon peculiarities in the structure of large business—its occupancy of many geographic markets, its presence at successive stages of production and distribution, and its status as competitor with its own suppliers or its own customers—these are the heart of the problem in the A & P case.

I have little quarrel with William Nicholls' analysis of the *Tobacco* case. He has pointed out the close resemblance between the legal theories of tacit conspiracy and the economic theories of oligopoly. However, there is more than one pattern of oligopoly. The files of the antimonopoly agencies contain records of a good many investigations in industries where sellers are few but where the evidence showed no basis for a charge of tacit conspiracy. I think, too, that Mr. Nicholls may have exaggerated the sweep of the court's allegiance to the economic theory of oligopoly. In the *National Lead* case, for example, a part of the government's request for relief was denied because the court was unable to see wherein eight competitors would provide more competition than four. As to the effect of the case upon the behavior of the industry, it is too early to form an opinion, for if there is to be any effect, it will emerge from the consent decree negotiations now going on.

I have examined Alfred Nicols' paper very carefully in an effort to discover from what sources he obtained the remarkable views about the law and facts of the *Cement* case which he has expressed. Apparently he has read the Supreme Court decision and a theoretical article by Arthur Smithies. If he had examined the Commission's findings of fact in the case with the care which he has devoted to Mr. Smithies' article, I think his paper necessarily would have taken a different line.

He begins from the assumption that cement is a highly standardized product. This misapprehension was general until evidence to the contrary appeared in the case and was summarized in the Commission's findings of fact. Instead of emphasizing small or even nonexistent elements of superiority in their several products, as is common among competitors, the cement producers went out of their way to pretend that there was no significant difference between one seller's cement and another, although in fact there were important differences. This concealment of quality differences lest they become the basis for price differences was one part of the Commission's proof of conspiracy.

The Commission did not use discrimination in the industry as its principal

proof that there was monopoly, as Mr. Nicols suggests. The Commission's charge was that the members of the industry conspired both to eliminate price competition and to discriminate in price. The charge was proved by many types of evidence, showing the way in which the price formula developed, the facilitating devices which were adopted to make it work, the disciplinary devices which were used against concerns that tried to break away, and the effects upon the prices paid by purchasers. Such evidence was supplemented by admissions by members of the industry. In one letter, for example, a member of the Cement Institute described arguments that the system was competitive as "bunk and hypocrisy" and said candidly that there can be no respectable discussion of the problem which is not based upon the point that the cement industry cannot stand competition. Another member of the industry wrote that one could not laugh off as competitive the fact that something like ten bidders quoted identical delivered prices to the government in sealed bids covering each of 112 different destinations.

Mr. Nicols attributes to the Federal Trade Commission the view that business must sell f.o.b. mill and that freight absorption is not permissible. In doing so, he ignores the testimony of four Federal Trade Commissioners to the contrary at the opening hearing of the Capehart Committee. He also ignores the fact that on October 12 the Commission made public a policy statement to its staff which repudiated these views.

EDWIN B. GEORGE: It is possible to conclude from these papers that we are still a long way from developing a thoroughly logical antitrust policy, one that is both internally consistent and consistent with the twentieth century universe and that makes felicitous use of what we think we know in economic theory. One handicap is the probable absence of judicial, political, and business acceptance of the ideal policy even should we find such. Others are increasing enmeshment in subtleties, such as how much weight to assign respectively to collusion and competition when their consequences are at least superficially alike, or overlap, or how far we ought to condemn a clearly dubious industry structure when our knowledge of the effects of alternatives is compounded of a mixture of guesswork and wishful thinking. (That remark is not directed against any single school of thought. I believe it to be true of both the offense and defense in our most useful controversies.)

Sometimes it seems that all that remains solid is the usefulness of the antitrust laws both as a symbol of American preferences and as a source of effective resistance to natural yearnings of many competitors for surcease from competition. Lacking such resistance, we could have drifted into English or even German habits of thought and behavior. Because my conclusions are so merely impressionistic, I do not particularly mind the mistakes of the authorities, should they turn out to be such. There is enough sound conception in the general approach to permit self-correction in time, and they are prevented by institutional blocks from moving in a direct line to even that portion of their objective which economists generally would regard as good.

We need a framework of competing assumptions within which to appraise

the various ideas offered us. The sponsors of these ideas have explicitly or implicitly taken sides in a much larger dispute than can be documented from these special cases. Some economists have resigned themselves to oligopoly (with or without product differentiation) as the normal case, and assume that the prosecuting agencies will be given neither the authority, funds, nor last-ditch support with which to break these up in the face of terrific resistance and unpredictable consequences. Doubtless for this reason, a few do not even bother to distinguish the differing reasons for fewness of sellers, or the types of oligopoly that can be smitten without much possibility of harm and those that must be handled with care. Others are also spared this distress—it does involve hard work—but only by a course of reasoning that opposes that of the first group at each of its essential points. They feel both that oligopoly is not really rampant, with cases deriving from important economies of scale extremely rare, and that it can be smashed without shattering effects through vigorous use of means already available.

Evidently we cannot give a thorough airing to the accuracy and implications of either the foregoing or intermediate positions, and I want to get to the papers themselves. For my immediate purpose, it will suffice to offer a few very brief and regrettably dogmatic observations about possible and actual bases for market structures departing radically from the purely competitive form; the general problems facing policy in its attempt to cope with such structures; and the utility of the major instruments to which recourse has been had in recent instances—at least until the meat-packing case.

I turn first to bases for market structures. Here it seems most illuminating to distinguish two extreme or pure types:

1. The cases in which there is no foundation whatsoever for the suspect structure in economies of large-scale technology, including those lodging in over-all management and distribution. In these instances, the industrial set-up—whether monopolistic, duopolistic, or oligopolistic—rests almost wholly upon control of a large number of small-scale plants by one or a few concerns—this control in turn resulting from such factors as patent monopolies, tight ownership of necessary raw materials, or absorption of competition until such time as the concerns have sufficient financial strength to discourage further entry into their fields.

2. Fields where institutional barriers to entry are completely absent. In place thereof, economies of scale are so important in relation to markets that the latter cannot support more than one or a small number of sellers.

I suppose that one can find examples of each of these pure types if he digs deep enough. Indeed, a decent approximation of the second kind may be found in some of our major public utilities. But it seems fair to say that the typical case reflects a blend of the two. That is to say, plant and multiplant “technological” economies are significant, but (as against purely private economies of bargaining power, etc.) at the same time they seem offhand not to be so big as to require firms of the existing size.

It is this fact that makes the problem so awkward. In the case of the first pure type, the general lines of attack, whether or not politically feasible,

are conceptually clear: atomization of the large enterprises, reduction or even elimination of control over patents and raw materials, and policing action to insure that the gains are held. With respect to the second pure type, the issue is whether or not one believes that some form of governmental regulation or ownership is preferable to permitting the oligopolists to proceed without hindrance, other than the more or less permanent threat of such remedies hanging over them—sometimes intense, sometimes dormant. (My own suspicion, unlike that of Professor Ellis and the late Henry Simon, is that a presumption lies in favor of the second course.) But where we have to deal with hybrids of widely varying composition, it would appear that nothing short of detailed case studies will enable us to ascertain the desirable character and extent of remedial action.

What can we say about the utility of the instruments now being used? Here I can remark simply—and dogmatically because of my time limits—that irrespective of the basis upon which oligopoly rests in most of the industries in which it appears, I doubt very much whether enforcement of a mere change in the form of price quotation will lead to substantial improvement in the market situation. Specifically, I doubt the wisdom of action restricted to imposing f.o.b. mill pricing systems upon our leading basing point industries. Where the oligopoly should be tolerated for its intrinsic benefits, persuasive arguments have been adduced by students of some of these industries that f.o.b. mill pricing may tighten restraints on price competition rather than loosen them. Where the oligopoly cannot justify itself, dissolution or the sorts of action suggested above would be the more logical cure for the collateral evils by which it would probably be attended. I might perhaps put it this way: Desirable antitrust policy is contingent, not only upon the provision of adequate weapons, but on enlightened choice in their use in any particular case.

I come now to the papers. Turning first to that of Professor Alfred Nicols, I agree with much of the author's reasoning as applied to the case he sets up, but have the following complaints.

Nicols declares that "nothing in the order shows how sellers [in the cement industry] can be prevented from recognizing their mutual dependence." There is no showing at any point in his paper, however, that there actually are important economies of scale in this industry or grounds for "mutual dependence" other than large corporate size based in each case on multi-plant ownership. That was what I wanted to know in the beginning and still wanted to know at the end. On the strength of the evidence offered, the FTC could merely deny it, and stand pat on its formula that it was attacking the basing point set-up in this instance only because it was central to a system of oligopolistic price discrimination that had no basis in economics. Following this line, the Commission could contend as it does that destruction of the pricing method could so narrow the avenues and incentives for collusion that it would be able to intercept and strike down any substitute measures. As said above, I doubt very much whether in industries dominated by a few firms this sort of attack can level the institutional or other obstacles to effec-

tive competition. But it remains true that to by-pass analysis of the foundation of the oligopoly, as does the author, is to evade the decisive question whether consideration should not be given to other lines of attack thereon.

In successive sentences Nicols jumps from a description of hypothetical cases—which as a rule I personally regard as valid—to a mere assertion that his severe conditions were met in many of the basing point industries, including inferentially cement. He then proceeds still further (at least so I interpret him) to claim that in none of the basing point industries is a competitive alternative economically feasible. Perhaps not, but, to repeat, concern over such fundamentals is the reason for my own preamble.

Incidentally, I feel that the Commission's alleged "circular reasoning," of which he makes much at one point, is not entirely circular. The Commission holds that discrimination reflects collusive restraints upon competition whenever such discrimination is systematic. Although the discrimination in and of itself is not illegal, the Commission would probably argue that the type which is based upon concerted action is ordinarily found to be systematic. The theoretical distinction in itself could be valid, thus relieving the Commission of a charge of circularity. The real point, again, is the practical one as to whether or not the same basic results in Nicols' hypothetical class of industry might not be achieved without collusion. I think it very likely, for all practical purposes.

The substance of the foregoing particular criticisms is that Nicols spoke under the title of "the *Cement* case" and then proceeded to set up a number of hypothetical circumstances to which operations in the cement industry might or might not conform. I concede, however, that our principal interest is in the public policy that should ensue if the circumstances did conform.

Since apparently the only remedy contemplated is to compel a change in the form of price quotation, perhaps all the author was required to do in strict justice was to ask whether or not such a change is likely to be helpful. But it seems to me that for our purposes he should have inquired more strongly if in fact a basing point system of pricing is in the social interest in view of the circumstances affecting the industry in question, and if and to the extent it does not seem to be so, whether weapons other than imposition of f.o.b. mill pricing are available to the antitrust authorities for corrective purposes. What are the resources of legitimate antitrust policy in such a situation? Could it strike at some of the roots of the structure, such as patents, or the monopolization of raw materials? Or would the authorities have to take their courage in their hands and go all out for dissolution? Finally, if economies of scale do constitute the controlling factor, should the government have a go at regulation, operation, or ownership? The problem resolves itself, therefore, into one of examining choices of which no mention has been made, and of which that selected by the Commission seems rather weak if it is to stand alone.

Perhaps the very difficulty of making such choices and of effectuating them would throw analysts into the arms of those who think that despite the violence to theory done by some of our oligopolies, they are not exploiting their position

outrageously and are now much too deeply entrenched to be shaken out by any available antitrust law procedure. That is the final choice after the possibilities of *ad hoc* actions are fully weighed. Perhaps I should add that there is a correct mood for this kind of weighing. It would reflect, I assume, just the right amount of doubt over the analyst's own wisdom, and just the right amount of skepticism over how big a part mere wisdom would ever be allowed to play.

In his comments upon the *Tobacco* case, Professor William H. Nicholls attacks from still another angle the question as to what antitrust policy might be able to do. Confining his observations closely to the case itself, he does not claim that those who regard fewness of sellers to be beyond the reach of politically practicable counterweapons are correct. Nor does he make any explicit claim that economies of scale here are sufficient to warrant the presumption that dissolution (even if successful) would be largely ineffective or have positively harmful results. He does seem to believe, however—and offers in support of his position the failure of the government or courts to advocate such a policy—that it might be very difficult to effect dissolution. In the end he expresses the view that a workable plan could probably be devised, although he seems to be much more impressed by the practicality of a two-way tax assault: impose them on advertising (progressively); reduce or eliminate the excises. I might add that the silence of the Justice Department on the dissolution question is in interesting and provocative contrast to its proposal to splinter the meat-packing industry.

Nicholls' orderly treatment of his subject raises a number of important questions:

What types of similarity of behavior among oligopolistic competitors will the courts accept as *insufficient* evidence to sustain an inference of conspiracy? Properly, I think, he phrases the question negatively rather than positively, the way matters now stand.

What is the legal status of a single dominant firm (say, controlling 50-65 per cent of an industry)? As the author notes, until the courts explicitly apply recent doctrine to a situation of this sort, the law will presumably continue to treat loose conspiracies more severely than such a dominant firm with an equal or greater degree of market control. And whatever the outcome of this search for a messianic number, I would be surprised to find any marked correlation between different points on the percentage scale and benefits or injury to the public interest.

The most intriguing question that Professor Nicholls leaves with us is what the Department of Justice was expecting to accomplish by its *Tobacco* prosecution. The main results, or at least sequels, were an inconsequential fine, a substantial increase in concentration since the decision was rendered, and apparently complete silence on the part of the Justice Department—again, in reply to the industry's query as to what the government wanted them to do. We are not instructed as to where any new principle came forth. Perhaps that is to emerge from the meat packers' case, which merely carries us full circle to the initial inquiry as to what the *Tobacco* prosecution was

expected to achieve. The complete domination of the economic considerations by the tax burden robs this case of too much significance in any event. The solutions will have to be custom made.

I agree in principle with Professor M. A. Adelman that a seller has the right to gamble on the chances of larger volume through the stimulating effect of lower prices. And I think that in his analysis of the social benefits and of the accounting techniques proper to an integrated concern, he is on sound ground. Regarding the economic rationale and consequences of such concerns, however, I suspect both his history and theory as generalizations. (I am unable to judge as to this particular case.) I would like to comment on these three points more specifically.

Concepts of Price Competition. The general position adopted, assuming a correct and balanced representation of the Department of Justice position, seems tenable—except for a few dicta such as that A & P's kind of price competition is the only possible kind. That generalization seems to envisage the only form of price competition as being one in which prices require to be brought below average or marginal costs until the reductions generate a new demand function capable of allowing profitable operations at the higher volume and lower price levels. But there are forms of price competition consistent with hitherto prevailing demand functions. The most obvious case is technological innovation which permits reduction in cost at the former volume but will yield *maximum* profits only at a lower price and consequent higher volume. As a second type, reductions may follow upon innovations which require much larger volume, not only to maximize net profit, but to yield any gain whatsoever from the new techniques. (This type probably includes all innovations which increase markedly the most economical scale of operations.) His concept of price competition seems unduly restrictive.

Real and Assumed Benefits of Integration. I quote another major conclusion, referring to cost advantages of vertical integration: "Either any or all integration is illegal, or a rational form of accounting is illegal, or both. This is the only possible implication of the government case."

Once more, if one assumes a correct statement concerning the government's position—a statement which his quotation thereof seems to support—Adelman's conclusion follows directly. The overtones which concern me in this context relate to the logic behind the integration. A footnote reference suggests, although admittedly does not assert, that the A & P integration is largely if not wholly desirable from the viewpoint of the social interest; that is to say, that it exploits technological advantages which are passed on to the consumer in price reductions. This may be so. However, I do not see anything in the text to indicate that it is so. The mere fact that there is sometimes (and for some periods) a lower price at the end of the sequence is not in itself a conclusive proof.

As to specific points here, I would mention first his reference to the advantages that flow from optimal operating rates for A & P manufacturing subsidiaries that have a capacity below the chain's minimum needs.

The author recognizes and spikes the fallacy of composition which exten-

sion of this argument for vertical integration to the whole economy would constitute. As he says, the cost of maintaining idle capacity is shifted, not reduced. But as to the great savings in advertising and selling costs—a companion point which he finds completely adequate—the issue is less clear. Granted that such savings are had, I would personally dislike the consequences of a universal extension of this logic. Even on economic grounds it might eventually invite the formation of monopolies or oligopolies displaying the antisocial attributes often associated with such market forms, without the justification and compensations found in some other industrial structures. He cannot guarantee us an indefinite growth of the degree of competition now enjoyed.

The "Brokerage" Issue (as a sample of Adelman's treatment of discrimination). On this point, I should like, first of all, to inquire if any valid distinction can be drawn between brokerage paid by sellers to buyers for valuable specific services and its use as a device for exacting or granting an extra price cut.

I suspect that the old-timers, at least, in the distributing trades would be rather surprised at the idea that there is somehow a smartly matched equivalence between brokerage paid to buyers and services performed. I am not for a moment denying that a reduction in distribution costs is effected by the function of mass buying. The credit for that saving is difficult to distribute by any set principle, however, as the amounts of both effort and achievement put forth by the three major parties to the transaction are varying constantly with circumstances.

This question can be discussed much more intelligently, it seems to me, if we forget such fantasies as the distribution of brokerage payments among seller, agent, and buyer according to the value of their contributions, and face it as the question of power and/or sellers' financial necessities that it has always been. There happen to be a number of pegs in the nomenclature of trading, such as list price, trade discounts, quantity discounts, net billing, promotional and advertising allowances, brokerage, and functional discounts. The net aim of the buyer was to disburse as little money as possible for a stipulated quantity of goods, and he did not care too much upon which pegs his price cuts were hung. If one were vacant, he would hang it on that, and that is what was done very often with brokerage. And he could sometimes manipulate the terms of his offer to create an appearance of vacancy at any point he wished. His smaller competitors could not, even though they were the bulwark of the seller's business and were just as willing to place their orders direct. No doubt the same plausible distinctions were manipulated by the big railroad shippers of yesteryear when they were hammering the weaker railroads into submission. In many cases, we are likely to find that the so-called "gains" were merely private (and privately appropriated) economies of large-scale monopsonistic buying, not social economies in any major sense. If we tear the labels off the case and consider only the measurable grounds for price discrimination under different and shifting circumstances, we shall provide a cleaner basis for economic analysis. To say, as

Adelman seems to be saying, that it makes no difference how big a price concession is exacted by the large buyer from his supplier as long as the latter can be persuaded to give it and as long as there is a label for it, is to becloud what are the main issues—to determine the economic effects of different degrees of discrimination under different circumstances, and to decide what kind of effort if any should be made to limit these by law.

KENNETH E. BOULDING: These three papers seem to a mere economist like myself to be exercises in the pathology of law rather than in economics. Mr. Bumble's ass certainly seems to have developed a remarkable ability to ride off in several directions at once. The A & P is condemned for being too competitive; the tobacco and cement companies are condemned for not being competitive enough. The A & P is accused of discrimination because certain economies of integration are passed on to the consumer. The cement companies are accused of discrimination because certain economies in transportation are *not* passed on to the consumer. It would be easy to be ribald at the expense of the law, or of its overzealous administrators. Nevertheless, as the papers have indicated, the economist's profession must bear part of the responsibility for the schizophrenic state of judgment in this matter. It is surely evident that the fault lies not so much in the administration of the law as in the state of the law itself, and still more in the state of public opinion which supports and interprets the law. Economists have had an important share in the development of that public opinion, and its confused state reflects an equal confusion in the minds of economists.

The difficulty is mainly a semantic one. One is tempted to compel all parties concerned to chant the semantic incantation three times a day: "*This* competition is not *That* competition." The antitrust law is based on a simple logical fallacy, which may be put into syllogistic form as follows: monopoly is bad; competition is the opposite of monopoly; therefore competition is good. What must be stressed—by-passing for the moment the question of whether monopoly is always bad in order to avoid a discussion of the the patent law and Schumpeterian dynamic—is that some kinds of competition are good and some kinds are bad. It should be possible for economics, even without soiling its scientific objectivity, to throw some light on which is which. Unfortunately even the economics of imperfect competition has contributed more to the befuddlement than to the clarification of this problem. The very technical terminology of theory has thickened the semantic fog. It is, after all, difficult to get anybody to come out against that which is pure and perfect, and the terminology itself has slipped unsuspected value-judgments into economic thinking.

What is needed from the economist is a new and more accurate taxonomy of competition, for this is prerequisite to any intelligent value judgments, and our present taxonomy is quite inadequate. Is perfect competition good, imperfect bad? One recalls that the more perfect markets become, the more they are subject to hysterical speculative fluctuations, and that it is only the imperfect markets that offer any anchor to the price system. On the

other hand, imperfect markets yield a familiar list of economic ills, in misallocation, maldistribution, and so on. Is price competition good, non-price competition bad? One recollects the classic defense of non-price competition in the labor market in the Webbs' *Industrial Democracy*, in which the restriction of price (wage) competition is seen to divert the stream of competition into the fruitful channels of improving quality work and life. On the other hand, there is the indefensible proliferation of unnecessary gadgets, gewgaws, and unwanted services in the marketing of commodities under non-price competition. Yet again there is the intolerable instability of the pure cutthroat price competition in perfectly oligopolistic markets! Again, is product differentiation bad, standardization and grading good? The wicked waste of competitive advertising we all know. Yet are we quite sure that we want a world of utility clothing and professional journals? And what, pray, is the good classical economist to do if the people *demand* monopoly? Would it not be inconsistent with the principles of natural liberty to prohibit its supply!

It is evident that as economists we are faced with the necessity of a thorough re-examination of the theory of competition, with a view to providing a useful framework for subsequent value judgments. Otherwise economics will only confuse judgment. Perhaps our most dangerous error is to underestimate the Devil, and to mistake one of his brief disguises for the Prince himself. Our antimonopoly lawyers tilt at windmills, and perhaps only succeed in knocking off a few slabs, in the absence of effective enforcement procedures. Their critics today seem too often to have been tilting at the Quixotes, and meanwhile the real enemy slips into another costume and is off. We must be more sensitive to the subtlety of values, both good and bad, and not rest our judgments on a wholly inadequate—because simple—taxonomic system.

POSSIBILITIES FOR A REALISTIC THEORY OF ENTREPRENEURSHIP

THE CLIMATE OF ENTERPRISE

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I

The subject of this paper may be best indicated by reference to a wire sent to me some months ago from Cambridge, Massachusetts. The communication was very brief and to the point. It read, simply, "Schumpeter impatient." Narrowly interpreted, this could be taken to mean that a title to this paper was long overdue. Interpreted more broadly, it suggests something much more disturbing; namely, the impatience of theorists with historians, an impatience which is frequently, sometimes forcibly, expressed by those in theory and statistics and which is not without justification. Apart from a few striking and well-known exceptions, historians have not bothered to consider how historical study and method may be of assistance to those working in closely related fields of endeavor. In this respect, the failure of historians has not only its drawbacks for others but its perils for history as well. These "others" are now taking history seriously and while good things may emerge, there is apparent an increasing tendency to use history in a way that most historians cannot accept. And in part, this paper¹ is an attempt to suggest what the historian might do about this novel and dangerous situation.

By way of introduction, I should like to point to the striking contrast apparent between the preoccupations of economists in the thirties and their preoccupations of the present. Interest in the thirties was mainly in short-period change and significant advances were made in business cycle analysis, imperfect competition, and what might be called "depression economics." There was present the general assump-

¹ My interest in enterprise as one aspect of changing economic and political organization arises from a study of international rivalries in the North Pacific. Striking differences in types of organization represented by the various participating powers (Russia and Spain, England and New England, and later the United States and Canada) called for consideration of the significance of, and causal factors at work in, these different forms of economic and political organization. Again, study of the place of primitive societies in the economic history of the area made it clear that economists' and anthropologists' use of such terms as "capitalism," "trade," "profits," "credit," and so on, had very little in common and that there were here unexpectedly difficult problems of definition and method. And finally, A. H. Cole's thought-provoking suggestions on the subject of entrepreneurial history posed awkward problems of terminology for those interested in the study of long-period change. At present, I am at the stage of moving from hypotheses to the fuller testing of these hypotheses. My remarks in the paper are tentative and exploratory and it is to be taken as a preliminary report rather than a presentation of conclusions.

tion that with the discovery and use of more adequate antidepressive techniques economies could be coaxed into high gear when the necessity arose, and that, fundamentally, the analysis of the short run was the logical province of enquiry. Now, in the late forties, there is a noticeable shift to interest in structural change, and much is being said about problems of time and development and, particularly, of growth. These new preoccupations seem to me to reflect greater awareness of deep-rooted changes in institutions and ideas—changes which are altering or modifying the whole setting of economic life and which are of the greatest consequence to theory and the relations between theory and history. They have, for example, greatly complicated the theorist's search for constants so fundamental to the initial choice of parameters for dynamic models and his problem of distinguishing between endogenous and exogenous factors. Empirical study is necessary for the determination of conditions that may be regarded as constant, and it is at this stage that the historian may be of some assistance, although for the most part he seems to have been unaware of the problem. Without pursuing this further at this point, it is clear that the theorist's increasing interest in "reality" and "time" demands a greater self-consciousness on the part of the historian as to the methods and objectives of historical writing.

In this connection, A. H. Cole's unpublished paper on the "Essence of Economic History" is most suggestive. It is pointed out that there are four principal approaches to the study of economic history. The purpose of the first, the "cultural," is to leave the reader better informed about the past and its main interest is in the telling of a good story. Most writings in economic history have been of this sort, but the trend is away from this to other and more promising approaches. Of these, the "analytical" approach is probably the most popular among economists in general and would reduce history to a testing ground for theoretical models and statistical tools. Its exponents tend to overlook (or to make light of) differences between historical and analytical method and between the theoretical model and the reality it seeks to explain. It also raises the very difficult problem of "not going too far back" when one step backward may be too far. The remaining approaches consist of the study of "problems," certain problems being viewed as focal points for the assembly and study of historical materials, and, finally, variants of the "sociological" approach, including the structural (which rests on the attempt to use Talcott Parson's brand of sociology in the study of history) and another, the examination of economic change in the light of all the factors that go to make up or explain such change.

These last two, the "problems" and "sociological" approaches, ap-

pear to have the most general appeal to present-day historians and many would be inclined to agree with Kenneth Boulding that "it may well be that the slovenly borderland between economics and sociology will be the most fruitful building ground during the years to come . . .,"² although other "slovenly borderlands" between economics and the disciplines of social psychology, anthropology, and politics promise to be equally fruitful building grounds. At any rate few historians will accept the "analytic" approach so popular these days with theorists and others, not as a matter of vested interest, but rather as a result of the conviction that theory and history are fundamentally unlike in purpose and method, and that to confuse these disciplines is to weaken prospects for fruitful work in both. When in the nineteenth century, partly as a result of the influence of the historical school, theorists pulled in their horns and turned increasingly to abstraction, the change was all to the good. And in spite of the misguided institutionalist attacks of this century, it remains important to emphasize the separateness of these disciplines, methodologically speaking. T. S. Ashton is helpful here. He writes:³

The theorist has taught us that economic phenomena are bound together in ways that the uninstructed would not suspect. He has created an apparatus which explains any given economic situation in terms of profit expectations, the propensity to consume and so on. But beyond that he cannot go. It rests with the historian to trace the causes, or as he would prefer to say, the antecedents and predisposing circumstances of these expectations and propensities: to say how it came about that at one time men were inclined to spend freely, and at another to hoard their resources, how it was that men were enterprising and optimistic in this year, cautious and penurious in that.

I shall assume here that at least some of the questions of history should be asked by historians, and, again, that historians must consider the problems that history poses for other disciplines and consider phrasing their questions in a way useful to these. The historian's neglect (possibly fear) of theory and quantitative method has greatly vitiated his work, but greater awareness of the possibilities (and limitations) of these does not imply an opposite extreme: that history is simply a happy hunting ground for the theorist and statistician.

In the remainder of this paper, I want to consider, in the light of the above, instances of what the historian might do about history—one very briefly, another at greater length. The first, the work of the Research Center in Entrepreneurial History, appears as one line of attack which has already demonstrated its worth. Many here will be familiar with its method and the questions it asks of history. As I see it, the ap-

² Kenneth E. Boulding, "Samuelson's 'Foundation': The Role of Mathematics in Economics," *Journal of Political Economy*, June, 1948, p. 199.

³ T. S. Ashton, "The Relation of Economic History to Economic Theory," *Economica*, May, 1946, p. 93.

proach involves broadening or extending the range of entrepreneurial functions and activities as commonly described in economic literature, and then placing the entrepreneur as the central figure in economic change. An entity once identified as a creature of theory now becomes a creature of history. The emphasis is on the functions of the entrepreneur rather than the environment in which he innovates, makes his decisions, and provides the dynamics of change to the accompaniment of uncertainty. There is no question of the great possibilities of this approach for the purpose for which, I think, it was originally designed: the study of business organization, motivation, and techniques in nineteenth and twentieth century United States.

For reasons which I have indicated elsewhere, this approach seems to me to be less useful for long-period study or for comparative history. The "entrepreneur" as visualized becomes a concept much too broad and general for such purposes. He turns out to be an extremely elusive entity, at times difficult to find, or not to be found at all, and frequently so subservient to other entities and ideas that he does not warrant the search. Primary orientation in economic life is commonly noneconomic. Causation is extremely complex, and, as a result, very serious difficulties arise from divorcing the entrepreneur from the institutional setting and "psychological atmosphere" with which he has been most commonly identified. Concentration on entrepreneurial functions or "tasks" tend to a neglect of change initiated by non-entrepreneurial forms and such change is very common in economic history. The act of innovation, per se, is very often less significant historically than the structural and motivational aspects of those situations in which the innovational act takes place. This one-sided emphasis on the act reflects, I suspect, the bias of those concentrating on the economic aspects of change, and particularly the short-run aspects (short-run from the historian's point of view). The hypnotic effect of the term "innovation" like that of "dissaving" is itself becoming an interesting historical fact.

There is no disagreement here with the definition of entrepreneurial functions. Criticism rests, as indicated, on the generality of the concept of "entrepreneur," a result of the failure to identify him with any specific set of conditions, institutional and "ideological." For comparative study of long-period change, I have found the entrepreneur most useful if visualized as an "ideal type" in the Weber sense, and hence to be regarded as an objectively possible entity even though one we would not expect to find in all its purity in real life (and quite different in this sense from the imaginative construct of economic man). This *Idealtypus* may be taken as one responding to a free competitive market, making his decisions, innovating and managing in response to

competitive market forces: in short, an idealized economic category operating freely in an idealized institutional environment.⁴ As thus conceived, this ideal is to be regarded as a useful point of reference in studies of historical change.

The antithesis of "free enterprise" in the sense of intensive or "water-tight" regulation and control, may be referred to as "authoritarian" or "bureaucratic." The distinction between these polar extremes of freedom and control rests on, first, the locus and use of power in each instance. Free enterprise is to be identified with complete dispersion of economic power via the competitive market (this is not to neglect the place of coercion in making such a situation possible), as contrasted with concentration of economic power in the production and distribution of goods and services. This alternative control type may be ecclesiastical, military, administrative (service state), or corporate, or a mixture of two or more of these. Historically, the authoritarian (or bureaucratic) form is more interesting than enterprise but is not the subject of this paper.

A second point of distinction, scarcely less significant, appears in the attitude of the entrepreneur and his opposite number to "time." With the ideal entrepreneur emphasis is on the short-run "maximisation of returns" as contrasted with the emphasis on continuity and permanence of the authoritarian entity; this last has been referred to as "the principle of organisational preservation." Oswald Knauth⁵ has written of the primary importance of stability and continuity and concern for the future in what would be referred to here as "corporate bureaucracy." The idea of eternity is, of course, most commonly associated with the most perfect bureaucracy of all, the Church. The entrepreneur, then, maximizes his net income as his primary motivation; the ideal authoritarian form maximizes period of existence as its most compelling purpose. Maximization of income with the limitations set by the market is the criterion in the one instance; in the other, dominance of the market provides the means of ensuring continuity of income as more significant than highest returns.

This approach and these distinctions lead to the phrasing of certain historical questions; for example: (1) What are the elements which appear to be basic to freedom of enterprise, historically considered? (2) What environmental conditions appear to have been most commonly associated with the presence of these elements (and conversely, with the absence of some or all of them)? (3) Concerning alternative forms of organization, what significant differences appear when these

⁴The environment of "free enterprise" is discussed more fully in an article to appear in the *Canadian Journal of Economics and Political Science*.

⁵Oswald Knauth, *Managerial Enterprise: Its Growth and Methods of Operation* (New York, 1948).

elements and conditions are considered? Are certain institutions and attitudes unique in this sense that their presence (or absence) may be regarded as decisive? (4) Is there a pattern of change to be discerned here? With reference to theory, may periods of time be discerned in which slowly moving variables have no upsetting effect on fast-moving ones?—or, in other words, can study of long-period change throw any light on the theorist's search for constants? And finally, what are the possibilities of ascertaining by statistical investigation the quantitative aspects of change in periods of relative freedom as compared with those of control and restrictionism? Comparative study of alternative forms of economic and political organization seems to me to offer exceptional opportunities for collaborative work in closely associated disciplines.

II. *The Security Environment of Enterprise*

The traditional and probably still the typical view of the entrepreneur in enterprise literature is that of an independent (even autonomous), rugged, and dynamic innovational type making his way largely by his own efforts. Closer attention to the conditions of enterprise leads to a somewhat different conclusion: that actually he has thriven only in a highly selective environment. This may be provisionally described as an environment in which various security elements have been combined. Study of conditions favorable to the enterprise system suggests that the presence of these essential security elements has been as much a matter of historical accident as anything else. And if some feature of enterprise system appears to be worth preserving, closer examination of environments favorable to (and destructive of) enterprise should not be without interest or value. There is no suggestion here that the entrepreneur does not, at times, modify or even shape institutions and attitudes to his own ends. And more than one writer has commented on the fact that self-destructive urges are not an uncommon feature of his activities (as entrepreneur). In short, he is not to be taken as a passive figure submitting meekly to circumstances. His influence as an active agent, however, varies greatly from period to period and area to area, and the non-entrepreneurial factors present in an enterprise system and the interaction between entrepreneurial and non-entrepreneurial activities merit more attention than they have so far received.

References to security are extremely common in the literature of the social sciences.⁶ In this paper it is necessary to narrow the problem

⁶ Study of writings of social scientists who touch on security in any of its manifestations reveals that, for the most part, attention is focused on those manifestations which present the most immediate and pressing problems in the writer's area or field of interest, with other aspects of security neglected or dealt with only by implication. And it is not difficult to discern interesting correlations between the security conditions of a writer's time and

down to a consideration of the securities essential to the existence of free entrepreneurial action. I shall treat these in a summary fashion, and then outline even more summarily the conditions which appear to have been most commonly associated with these securities. It is scarcely necessary to point out that the interrelations of these securities and conditioning factors are very close and that they are dealt with separately only for analytical purposes.

The first and most obvious manifestation of security I shall label "entrepreneurial security," this referring to the freedom of the businessman to take "the ordinary and legitimate risks of doing business," or what the late Henry C. Simons described as "risks of investing in the wrong places—risks of demand changes, of technical obsolescence in plant facilities, and of guessing badly only because too many others guessed the same way."⁷ In the main, this is the manifestation of security which liberal economists have been most concerned about, and their proposals relate to defense of competition against coercive elements in business, labor, and government, and to "sound" taxation, monetary, and commercial policies. Professor Lionel Robbins (the "new" Robbins), for example, looks "to adequate action to maintain reasonably stable the volume of aggregate demand with which the system of market and enterprise has to function," and the establishment and maintenance of "a deliberately created competitive order." Where prospective returns to enterprise are not such as to compensate for risks associated with threats to entrepreneurial security, then entrepreneurship languishes and the "corporate" form⁸ of business organization appears to be the logical (only) form of organization—a point sometimes overlooked in studies of medieval guilds, trading leagues, regulated companies, and joint-stock organizations.

Whether this variant of security is examined from a historical or contemporary point of view, the tendency to examine it as a separate and distinct problem in itself seriously weakens prospects for either realistic analysis or sound reform measures. Commonly, threats to entrepreneurial security originate in the destruction of other and equally fundamental securities. This is not to overlook the fact that

the assumptions, explicit, and more commonly implicit, that he makes about security. In this paper, the problem is that of moving beyond the "sealed compartment" approach to security, in which commonly only one aspect of security is taken into account, to a consideration of the combination or balance of security elements in a given environment. In an incomplete study on the history of enterprise, an attempt is being made to extend this approach to a consideration of "security" in authoritarian as well as enterprise environments.

⁷ Henry C. Simons, *Economic Policy for a Free Society* (University of Chicago Press, 1948), p. 146.

⁸ "Corporate" here refers to authoritarian forms of business organization. The modern corporation may be entrepreneurial or authoritarian, this resting on the distinctions of power and time referred to earlier.

entrepreneurs themselves are active agents in preserving or destroying entrepreneurial security; certainly exhortations to entrepreneurs to behave themselves and to act as statesmen imply that this belief is held in high circles. But examination of the whole set of conditions to which businessmen have responded in the past, and are responding now, will produce more fruitful results than the most eloquent appeals to their finer instincts.

A second and closely related manifestation of security is that of social or "want" security which may be defined as security against want for that part of the population which matters politically (either in terms of the use of force or the vote), want being an elastic term the meaning of which has changed greatly from one period to another. Professor Helleiner has written of this problem in the medieval world, and recent interest in social security has seen a spate of writings on social legislation in later centuries to the present. It has always been a major problem facing Church or state, and appeals to noneconomic symbols have not been the least valuable of solutions. It presents an acute problem today in some areas because the so-called "masses" now count in national policies as they have never counted before, and slogans of social security or full employment cannot be suppressed or ignored, as sporadic, ill-organized revolts once were.

And once again, indeterminateness as to what is a "fair" share strengthens the case for a strong central authority to define "fairness" and guarantee "social justice." There are very dangerous implications for entrepreneurial freedom in policies which define social security as the great and overriding objective of reform rather than entrepreneurial security as the logical starting point. The issue here is sometimes stated, erroneously, I think, as one involving a choice between stability and progress. There are many forms of stability and many types of progress. From the standpoint of the entrepreneur, however, unless he can sell the idea that the straightest, perhaps only, road to social security is via entrepreneurial security, the immediate future offers very unhappy prospects indeed—which takes me to a third manifestation of security, that of ethical security, or Weber's "psychological atmosphere."

This variant of security, the ethical, rests on the presence of social sanctions sufficiently strong to ensure general acceptance of entrepreneurial activities as "good." A healthful "enterprise" environment is out of the question without a popular faith in enterprise. And it is highly important in this connection that people in general feel that they have a stake in, and form an integral part of, the system. This is in itself an act of faith—a faith which must rest on such sanction elements as religious feeling, nationalism, legalism, tradition, custom, and even

education (I shall touch very briefly on some of these sanction elements at a later point) and the close identification of entrepreneurial health with the welfare of society. In this sense, "free enterprise" has become a fighting slogan, although it has been pointed out very recently that in the United States this slogan has been used much more effectively by the corporation than by the individual.⁹

And finally, the fourth manifestation, that of political security, which is closely bound up with the above. Political security has two aspects, the first being that of defense against external enemies as more important than opulence. Threats of hostile action (genuine or "manufactured") if of long duration will, in the end, destroy enterprise. Protection against the foreigner has been a common problem of economic organization over history, and methods of solving this problem have been highly significant to the character of organization. Frederic C. Lane's study of Andrea Barbarigo, for example, notes the tendency to collusive action (in economic affairs) among those merchants banding together for defense, and John U. Nef's studies of war and economic progress in the two centuries following 1540 have thrown new light on factors which help to explain contrasts between the course and character of continental and English economic development.

Long preoccupation with military frontiers and the resulting strength of the military caste (Mannheim has interesting things to say about the military mind and Hanson Baldwin has suggested certain implications for our time) runs directly counter to preoccupation with the "ordinary business of getting a living." Recent developments in the technology of waging war give little promise of restoration of this variant of political security in the near future. Over history, the origins of threats to this security have been many and complex—religious and ideological differences, dynastic aspirations, the presence of unsolved economic problems.

The second aspect of political security is that of internal stability or order (Adam Smith's "order and good government, and along with them, the liberty and security of individuals"). Threats to this variant of security have taken different forms at different times—the disappearance of accepted status, the breakdown of traditional restraints upon the behavior of the individual, the tyranny of absolutist ruler or majority. Tensions are most likely to originate in the economic sphere, but it is dangerous to assume that, historically, this is the general case. But whatever the source, risks of this sort are beyond the ordinary risks of doing business, and in this sense are destructive of

⁹ See Louis Hartz, *Economic Policy and Democratic Thought: Pennsylvania, 1776-1860* (Cambridge: Harvard University Press, 1948), and review of same by Carter Goodrich in *Journal of Economic History*, November, 1941, pp. 210-213.

enterprise, involving as they do the tendency to action infringing on essential freedoms, since the problem is fundamentally one of a ruling group maintaining its power and position by all the means at its disposal.

It is clear, as stated, that the security elements, taken as a whole, are closely interrelated. Serious threats of any duration to any one (or its destruction) upset the security balance and lead to organizational change, and no one-factor explanations will do. The liberal answer, I suppose, would emphasize that strong entrepreneurship offers the greatest hope of internal stability of economic and military power and of adequate employment opportunities. I have identified this entrepreneurship with dispersion of economic power and suggested that it is helpful to analyze threats to enterprise as threats to the basic security elements, and that the nature and direction of these threats is different in different situations if long-period change is considered. If, alternatively, our concern is with administrative bureaucracy (socialist or "service state") or with some variant of the corporate form of economic organization (for example, a working combination of business, labor and agricultural groups), then the security problem appears in a different form. The security elements of these power structures may be similarly examined, and the absence of entrepreneurial security reflects a simpler, if no less vulnerable, structure. The stability of bureaucratic structures has been discussed by Max Handman and has been the subject of long and intensive study by H. A. Innis.

III. *The Conditions of Security of Enterprise*¹⁰

So far I have outlined a historical model to be used as a point of reference in comparative studies of different areas and periods. A more adequate treatment than I can present here would be to consider the underlying conditions which have been most commonly associated with the presence of the basic securities. Of these, the most significant

¹⁰ Because of considerations of time and space this section has been cut so drastically that it may well obscure rather than clarify or add to what has been said to this point. It should be emphasized that geography, technology, and institutional factors are mutually conditioning and conditioned and that each category is noted here only in terms of tendencies favorable (or adverse) to enterprise; and that entrepreneurial action and attitudes interact with this complex. In concrete cases, technological changes affect and reflect the character of economic organization. Again, enterprise is itself part of the institutional framework and one of the problems of "enterprise history" is to account for the appearance of the entrepreneurial form as a significant, even dominant, institutional factor in certain periods and areas, and its absence (or insignificance) in others. Likewise, the "climate of ideas" is influenced by as well as influencing the status and power of the entrepreneur. In short, the security environment of enterprise is a function of the interaction of the above elements, and enterprise, where present, must be regarded as an integral, interdependent element of that environment, one which may be stressed as particularly significant in itself, but which cannot be treated as an isolated, autonomous, or passive feature of historical change.

has been the institutional setting (in terms of structure and ideas) although this is closely bound up with the nature of the physical environment and the rate of technological change. I confine myself here to a few scattered comments on how these conditions might be examined in one particular context; namely, their bearing on the presence (or absence) of free enterprise with its central attribute of dispersion of economic power.

Geographic influences, for example, are highly significant in the historical long-run in establishing limits to the range of economic activities and in determining types of organization. To mention only three, we may note the geographic factors bearing on the problem of national defense (isolation—geographic barriers to easy invasion), the long-run significance of maritime as contrasted with continental backgrounds, and the abundance or paucity of strategically located resources. These and others may be related to the securities mentioned and hence to their tendency to strengthen or weaken entrepreneurial action. Changes in techniques, whether considered in terms of accounting and finance, production, exchange, transportation or communications, may be considered with reference to their relation to increasing concentration (or dispersion) of economic power; e.g., their effect on the extension of the market in relation to the size of the units operating within it. Again, technical advance in the means of destruction or in terms of media of communication and their influence in shaping mass sentiment and opinion (the most pervasive technique of all)—these are very closely related to the security environment referred to.

Of the institutional factors, the state as the center of coercive power in its political aspects is the most significant to enterprise and its environment. "State" in this connection may refer to the political authority of the small medieval town, or the Council of Augsburg, the Senate of Venice, the mercantile oligarchy of Antwerp, the absolutist state of Colbert's France, or the government of mercantilist and liberal England. From the standpoint of the entrepreneur, state action has three principal aspects: protective, promotional, and corrective. The first, protective, relates to the maintenance of entrepreneurship within the area of control; the second, promotional, refers to the expansion of the area of enterprise by, say, military or diplomatic action or public works; the third, corrective, involves action against tendencies destructive of competition. (It should perhaps be added that these are not sharply demarcated and that state action may be repressive as well as a "constructive.") There is tendency to overemphasize the importance of the state as a positive agent. In the main, its actions and policies are necessarily adaptive to conditions, whether of military necessity or mass unemployment; but Professor A. P. Usher pointed

this out long ago. It is impossible to separate state from law, the most "specialised and highly finished engine of control employed by the state," and the legal system as a stabilizing force, a sanction element, protector of property rights and so on, is to be regarded as one of the elements most crucial to the power and freedom of the entrepreneur.

Again, the organizational aspects of religion have been of the greatest consequence to enterprise—whether, for example, the "church" appears as a militant and disruptive force or as a center of social stability and social welfare, and its immense importance as an economic organization in the past has not been overlooked by historians. Finally, social organization—the importance of a strong and distinct community life, and the status of the entrepreneur in the social structure—has been from the beginning one of the great formative influences in the history of enterprise. Closely related to such institutional factors is the climate of ideas or *Zeitgeist*. The bearing of religious feeling and attitudes on economic life has been the subject of an extensive and controversial literature. Equally important is national feeling, and it is of the utmost consequence to the entrepreneur whether the prevailing sentiment is that of the statism of the absolutist, mercantilist or neo-mercantilist varieties, or the liberal nationalism which is commonly identified with the nineteenth century. Finally, social attitudes, and the almost overwhelming importance of social respectability—these have been among the most decisive of sanction elements.

This bird's-eye view of the principal conditioning factors is used here to suggest one way of getting at the essential conditions which seem to promote (or for that matter, destroy) prospects for free entrepreneurial action. By considering the basic securities and their conditions in selected periods and areas, some light may be thrown, I think, on the determinants of freedom of economic activity in history, and conversely, on the absence of such freedom in periods of authoritarian control.

IV. *Concluding Observations*

In discussing the climate of enterprise I have been talking about freedom and power in only one context. There is no assumption that other freedoms of other entities (than the entrepreneur) resting on other power relationships may not exist and be talked about; i.e., enterprise, whether spontaneous or consciously planned and supported, may be seen as but one sort of answer to the broader problem of human freedom, although the one most familiar to us (and to many the most acceptable). It is legitimate, I think, to speak of concentration or dispersion of economic power when distinguishing certain categories of action and organization, but wrong to see in dispersion of economic

power the only means of maximizing individual freedom of action and thought. Liberalism is best seen as "a method of social adjustment" and if, upon examination of the environmental conditions of enterprise it becomes apparent that increasingly stormy weather lies ahead, the problem becomes that of seeking to establish the possibilities of freedom where concentration of economic power must be taken as an accepted fact and where competition, however fierce, is significantly unlike that of the competition of the free market and more akin to the competition of power aggregations in terms of perpetuation of organization and extension of control.

The almost universal desire for peace and quiet appears to be a reflection of a sadly upset security balance, and corporate action of some kind, whether on the part of business, labor, agriculture, or even the lowly consumer, must be viewed, in part at least, as a defense against insecurity conditions which entail risks beyond the abilities of the entities concerned to bear without reorganization to meet the conditions of a dangerous world. Until well into this century, there was the general assumption that apart from threats to entrepreneurial security there were present no decisive changes in the environment of economic life; yet threats to entrepreneurial security present but one aspect of far-reaching changes of the greatest import to the expectations and propensities referred to by Professor T. S. Ashton. Investment and savings patterns reflect fears much more deep-rooted than those associated with temporary or short-lived periods of depression followed by recovery and a new start. Now politics rather than economics is looked to for solutions, ideological differences loom as portentous threats to external security, and national feelings appear in a form even more dangerous than that of the sixteenth and seventeenth centuries.

If a pattern of change is to be discerned over the historical long run, it is one mainly notable for the duration and stability of authoritarian structures. In many areas (e.g., Spain and Russia) the entrepreneur has at no time made any significant headway (this is not to overlook the Russia of the thirteenth and fourteenth and early twentieth centuries, and Spain's feeble effort in the eighteenth). In other areas where the entrepreneur has for a time stepped into the limelight, very powerful authoritarian supports have, in large part, provided the essential securities, and in such areas the wave of enterprise has been preceded and followed by one (or a mixture of) the non-entrepreneurial forms referred to earlier. These waves have originated in marginal areas where centralized controls have been weak, and where of any magnitude, they have profoundly altered the older rigid structures of control. Over history, the margins have been those of conti-

nents, and trade and finance have been the most typical (although, of course, not the only) spheres of entrepreneurial action. Apart from developments in the Mediterranean (first) and the North Sea area (later), the most striking and momentous event in entrepreneurial history is the transplanting of enterprise in North America, this continent taking what it could use, modifying or rejecting the rest. (It would take me too far afield at this point to raise the problem of preserving enterprise, whose origin is maritime, in a continental background or environment with its tendencies to giantism and centralism so inimical to enterprise.)

For economists, the most comfortable environment for analytical study is either the area and period in which there is sufficient approximation to freedom of economic action that it may be labeled "entrepreneurial," and where natural laws or tendencies and cyclical patterns of change may be discerned or at least sought with some grounds for optimism, or the area and period in which authoritarian control is associated with a fair degree of peace and quiet, where the essential securities (apart from the entrepreneurial) are present. In the latter, constants and uniformities may be sought, and although economic analysis lacks the precision and scientific air it attains in the entrepreneurial society, since greater breadth and inclusiveness is necessary, prospects for realistic analysis are considerably brighter than in periods like the present, when solid ground for analysis is difficult to find and short-run predictions turn out to be extremely risky.

The problem of the historian is to stand sufficiently far back to see the terrain as a whole—the long ground swells of authoritarianism, the shorter, sharper, more jagged peaks of comparative freedom (of the sort discussed in this paper). And in the attempt to see historically the relative heights, extent, and direction of these historical movements, the "ideal entrepreneur" and his environment seem to me to be a useful point of reference.

THE ENTREPRENEUR AND ECONOMIC THEORY: A HISTORICAL AND ANALYTICAL APPROACH

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Entrepreneurs—very broadly defined—are those who organize, manage, and actively control the affairs of units that combine the factors of production for the supply of goods and services. Uncertainty-bearing has often been considered to be a function of the entrepreneur, but it seems to me more appropriate to regard it as a function of the owner. Of course, the entrepreneur risks his reputation, but in so doing he is not engaged in what is normally referred to as uncertainty-bearing.

As defined, the term entrepreneur is very inclusive. It is a static as well as a dynamic concept; it applies to public as well as private enterprise. From the inclusive nature of the term there follows the desirability—when speaking with precision—of preceding the word entrepreneur with one or more adjectives and of using terms such as private innovating entrepreneur. A broad definition of the word entrepreneur fits the looseness of current terminology, while the employment of descriptive adjectives sharpens the term. The same precision could, of course, be achieved through agreement on a whole new set of terms, but agreement now is unlikely.

Within every private business concern one or more (often all) of the following three types of entrepreneur will be found: those who carry out the more or less routine aspects of management; those who combine means of production in new ways, that is, the innovating, dynamic entrepreneurs; and those who actively control or direct.¹ The terms “managing” and “innovating” entrepreneur are probably sufficiently clearly understood, but perhaps a word or two ought to be said about my conception of the “controlling” entrepreneur. He bears some resemblance to Professor Knight’s person who selects the one to make decisions, but I have in mind someone who operates beyond that selection.² The controlling entrepreneur exercises continuing control. He gives the go-ahead or the stop signals to the innovating entrepreneur or entrepreneurs in his organization; he approves or disapproves of the policies of the managing entrepreneurs—sometimes going so far as to oust the managing entrepreneur or to spur him into becoming an innovating entrepreneur. Of course, sight must never be

¹ Public and other nonbusiness entrepreneurs, who have much in common with their counterparts in business, are not treated in the rest of this paper.

² See Frank H. Knight, *Risk, Uncertainty and Profit* (Boston and New York, 1921), p. 297.

lost of the fact that the three kinds of entrepreneurship may be bound together in the same individual; the separation of types is generally observable only in our large corporations. That sharp lines cannot always be drawn between the entrepreneurs of different types gives rise to confusion and difficulties. A given person rarely is engaged for a long period of time solely in managing or innovating or controlling.³ Even a rather firmly fixed routine operator may be stimulated to assume the role of the innovator if he sees a decline in the share of the total market being received by his business. It is this lack of purity in types and the possibility of shifting from one type to another under certain stimuli that indicate the desirability of studying together these three kinds of entrepreneur and of using the term entrepreneur with a comprehensive meaning.

The seeming impossibility of picking out business people to be labeled entrepreneurs of a particular type—or even entrepreneurs in general, for the managing entrepreneur is often very close to the laborer and the controlling entrepreneur to the capitalist—precludes, for the present, precise studies of many kinds. One cannot, for example, make a very thorough study of the “entrepreneurial force” to parallel that of the labor force. Emphasis upon the entrepreneur as a person has another drawback. He who makes “the desert bloom” is often a very colorful person; a study of him in consequence is likely to turn into a romantic product. It would seem the part of wisdom to center research in the field of entrepreneurship—for the time being, at least—upon entrepreneurial decisions and their repercussions. These can probably be analyzed and appraised in a critical fashion.

To explore these decisions—particularly the decisions of the innovating entrepreneur—is a most important present-day problem. The growth or development of the economy is surely closely related to the activities of the innovator. It is he who introduces new ways of doing old things and the new things themselves. He operates amid newness: growth in the size of his business, production of new goods and services, etc. I hasten to add that I do not underestimate the role of the non-entrepreneurial forces in economic development—the “climate” of entrepreneurship. Very often the innovating entrepreneur is primarily an opportunist who takes advantage of the unwilling incidental effects of such situations as those created by population shifts.⁴

Cold-blooded appraisals of the role of the entrepreneur in economic development are rare; glorification is usual. In the latter vein, Bentham's writings yield some splendid sentences. “National op-

³Of course, there is the added difficulty that an entrepreneur may also serve as a laborer, landlord, or capitalist.

⁴See my “A Theory of Entrepreneurship,” *Journal of Economic History*, Supplement, December, 1942, pp. 142 ff.

pulence," he wrote, "required the reprobated hand of a projector to lay the first stone. . . . But what and whom are we to thank for it [the constant and uninterrupted progress of mankind], but projects, and projectors?"⁵ And again:

But the stepping aside from any of the beaten paths of traffic, is regarded as a singularity, as serving to distinguish a man from other men. Even where it requires no genius, no peculiarity of talent, as where it consists in nothing more than the finding out a new market to buy or sell in, it requires however at least a degree of courage, which is not to be found in the common herd of men. . . .⁶ The great road which receives the footsteps of projectors, may be considered as a vast, and perhaps unbounded, plain, bestrewed with gulphs, such as Curtius was swallowed up in. Each requires an human victim to fall into it ere it can close; but when it once closes, it closes to open no more, and so much of the path is safe to those who follow.⁷

With somewhat less glorification, the role of the entrepreneur has been variously described by subsequent writers. Almost all of their presentations, however, have been sketchy; the entrepreneur has not seemed to be sufficiently important to bring him into sharp focus in a full-length portrait. Professor Schumpeter's work, of course, is in contrast. He has produced a theory of economic development in which the role of the innovator is clear and prominent.⁸ Even if the innovating entrepreneur does not play quite so significant a role as Schumpeter has indicated, this and the other types of entrepreneur—which have scarcely been given their due—are deserving of much more study.

Let me indicate the extent of information that I believe is needed by referring to a rather definite situation that some would classify as a problem for the managing entrepreneur and others as a problem for the innovating entrepreneur. Be that as it may, the object is to suggest the kinds and extent of knowledge concerning the entrepreneur that are required by the economic theorist. Confronted with a falling demand for his product, an entrepreneur seems to have many courses of action open to him: he may, for example, add to his selling force, or put on an advertising campaign, or otherwise attempt to increase his sales; he may get together with labor and work out a plan that should result in decreased cost per unit of product; he may combine with competitors to reduce competition and to maintain prices; he may ask the government for a subsidy or tariff; he may reduce output and try to maintain prices. Perhaps it is mere chance that he elects one or the other alternative; it is usual, however, to attribute to the entrepreneur more calculated action. If students of entrepreneurship would throw light upon entrepreneurial behavior that would be usable in this

⁵ Jeremy Bentham, *Defence of Usury* . . . (London: 1818, 4th ed.), pp. 161-162 and p. 151.

⁶ *Ibid.*, p. 160.

⁷ *Ibid.*, pp. 169-170.

⁸ Joseph A. Schumpeter, *The Theory of Economic Development* (translated by Redvers Opie) (Harvard University Studies, Vol. XLVI, 1934).

and similar situations, economics could make more rapid progress.

For the study of the entrepreneur and his decisions, our organized body of knowledge is neither very extensive nor precise. Our "bag of tools" consists, in the first place, of propositions concerning the motives of entrepreneurs. Most economists have assumed in the formulation of their theory that people—and presumably entrepreneurs are included—conduct their affairs with regard to their own interests. Adam Smith's famous sentence relating to the butcher, the brewer, and the baker is in point.⁹ J. S. Mill was somewhat more careful. He pointed out that he did not regard people in actual life as being dominated entirely by economic motives.¹⁰ Concerning the entrepreneur he was explicit when he stated that small producers often value so highly the feeling of being their own masters that they consume their small capital in an unsuccessful struggle for independence; "they either sink into the condition of hired labourers, or become dependent upon others for support."¹¹ In stating abstract principles of political economy, however, Mill insisted on supposing "all parties to take care of their own interest."¹²

Like Mill, Marshall was anxious to avoid the accusation of treating only the economic man;¹³ so concerning entrepreneurs he wrote: "Organizers of improved methods and appliances are stimulated by a noble emulation more than by any love of wealth for its own sake";¹⁴ and the entrepreneur "often holds his own with great tenacity even under considerable disadvantages; for the freedom and dignity of his position are very attractive to him."¹⁵ Another sentence from Marshall is also illuminating: "For just as a racehorse or an athlete strains every nerve to get in advance of his competitors, and delights in the strain; so a manufacturer or a trader is often stimulated much more by a hope of victory over his rivals than by the desire to add something to his fortune."¹⁶

Schumpeter, somewhat similarly impressed, observed that "entrepreneurs retire from the arena only when and because their strength is spent and they feel no longer equal to their task."¹⁷ To him they are motivated largely by "the dream and the will to found a private kingdom . . . [by] the impulse to fight, to prove oneself superior to others,

⁹ Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (London: Cannan's 2d ed., 1920), I, p. 16.

¹⁰ John Stuart Mill, *Principles of Political Economy* . . . (London: Ashley ed., 1909), pp. 428-429, for example.

¹¹ *Ibid.*, p. 136.

¹² *Ibid.*, p. 441.

¹³ Alfred Marshall, *Principles of Economics* (London: 8th ed., 1927), pp. 26-27.

¹⁴ *Ibid.*, p. 14.

¹⁵ *Ibid.*, p. 603.

¹⁶ *Ibid.*, p. 23.

¹⁷ Schumpeter, *op. cit.*, p. 92.

to succeed for the sake, not of the fruits of success, but of success itself . . . and [by] the joy of creating, of getting things done, or simply of exercising one's energy and ingenuity."¹⁸

Fear of bankruptcy and fear of temporary financial embarrassment have been suggested by R. A. Gordon as more powerful influences upon the entrepreneur than the drive to procure maximum profits.¹⁹ In a somewhat similar vein, Moses Abramovitz pointed out that during the upswing of a business cycle a businessman operates chiefly with regard to the volume of profits, but during the downswing it is the desire for security that is uppermost in his mind.²⁰ The idea of motives changing according to a pattern is not startling, but it is rarely utilized in connection with entrepreneurial actions. It should also be noted that the remarks of both Gordon and Abramovitz seem to apply more to the managing and controlling entrepreneurs than to the innovator—though the latter is not completely excluded. Partly on the basis of the various observations noted above and partly on other bases, one might venture that *security* is the prime motivating force for the managing entrepreneur, *adventure* for the innovator, and *power* for the controlling entrepreneur.

Let us next explore hypotheses concerning the behavior of entrepreneurs. I have tried in the first place to bring together the more or less explicitly stated propositions concerning entrepreneurial activity that are scattered throughout five important English economic treatises published during the last one and three-quarters centuries: Adam Smith's *Wealth of Nations*; David Ricardo's *Principles*; John Stuart Mill's *Principles*; Alfred Marshall's *Principles*; and John M. Keynes's *General Theory*. My object was to assemble the propositions utilized by a group of writers of common bond whose works were important in the development of economics, stretched over a long period of time, and treated general economic problems without giving special emphasis to the entrepreneur. The result is the body of doctrine generally utilized.

Discussion of the division of labor in the first chapter of the *Wealth of Nations* might easily have provided Smith with an opportunity to state a principle or two of entrepreneurship. But that force, which he saw operating so powerfully toward an increase of the nation's wealth, seems in many passages to be solely the result of a general human trait—the propensity to truck, barter, and exchange²¹—rather than the result of entrepreneurial decisions. There is, however, at least one

¹⁸ *Ibid.*, p. 93.

¹⁹ R. A. Gordon, "Short-Period Price Determination in Theory and Practice," *American Economic Review*, June, 1948, p. 271.

²⁰ Moses Abramovitz, "Monopolistic Selling in a Changing Economy," *Quarterly Journal of Economics*, February, 1938, p. 201.

²¹ Smith, *op. cit.*, I, p. 15.

important passage to the contrary: "The owner of the stock which employs a great number of labourers [i.e., an entrepreneur], necessarily endeavours, for his own advantage, to make such a proper division and distribution of employment, that they may be enabled to produce the greatest quantity of work possible."²² Here is one of the few propositions in the *Wealth of Nations* that relates to the private innovating entrepreneur. Marshall had another idea linking the entrepreneur and the division of labor. It deals with the relations between entrepreneurs within a business. His words might be stretched to read as follows: a group of entrepreneurs, regardless of the legal form of their business organization, adapt themselves better to the management of their concern if each heads one of approximately co-ordinate departments equal in number to the number of entrepreneurs.²³ It is the students of management, not the economists, who have developed principles built upon observations of specialization within a business unit.²⁴

Propositions concerning the way an entrepreneur combines factors of production and the extent to which he utilizes them are so intertwined that it is well to take them together. Ricardo saw entrepreneurs operating with an eye on the margin. For example, he wrote: "He [a farmer, in this case] will not employ £11,000, unless the last £1,000 can be employed so productively as to afford him the usual profits of stock."²⁵ Marshall discussed at length the problem of combining factors of production and the limits to investment in them. He combined his observations into his "Principle of Substitution," which I should like to break into the following two propositions: (1) at each volume of output the entrepreneur combines the factors of production so as to get their least expensive arrangement;²⁶ (2) each entrepreneur pushes "investment of capital in his business in each several direction until what appears in his judgment to be the outer limit, or margin, of profitableness is reached; that is, until there seems to him no good reason for thinking that the gains resulting from any further investment in any particular direction would compensate him for his outlay."²⁷

Keynes used somewhat similar propositions, phrased in more technical language. He maintained: (1) that entrepreneurs endeavor to fix the amount of employment at the level which they expect to maxi-

²² *Ibid.*, p. 88.

²³ Marshall, *op. cit.*, p. 301.

²⁴ See, for example, L. P. Alford, *Laws of Management Applied to Manufacturing* (New York, 1928), pp. 74, 82.

²⁵ David Ricardo, *Principles of Political Economy and Taxation* (London: Gonner ed., 1891), p. 314.

²⁶ Marshall, *op. cit.*, pp. 404, 514-515.

²⁷ *Ibid.*, p. 356, and also pp. 406, 435, 514-515. To this proposition Marshall believed peasant proprietors formed an exception. See *ibid.*, p. 650 n.

mize the present and prospective excess of the proceeds over the factor cost;²⁸ (2) that an entrepreneur "uses by preference that part of his equipment for which the user cost plus factor cost is least per unit of output";²⁹ (3) that entrepreneurs push investment "to the point where there is no longer any class of capital-asset of which the marginal efficiency exceeds the current rate of interest."³⁰

Closely akin to propositions concerning the combination and utilization of factors of production within a business are those that relate to the shifting of resources from one concern or place or industry to another. On this point Ricardo maintained that entrepreneurs operate with a "restless desire" to quit the less profitable for the more advantageous businesses until the rates of profit are equalized or fixed "in such proportions, as may in the estimation of the parties, compensate for any advantage which one [business] may have, or may appear to have over the other."³¹ Ricardo recognized the difficulties of transferring capital from one business to another and suggested that the transfer would take place largely by alterations in the circulating capital devoted to the different businesses—decreases in short-term borrowings in some directions and increases in others. The granting of bounties and the imposition of certain taxes were cited as two factors that stimulated such entrepreneurial activity.³²

This shifting of entrepreneurial activity is not treated so clearly or fully in the other four treatises. Mill stated that entrepreneurs shift to the most lucrative opportunities but practically ignored the process by which this is done, and he spoke of a tendency toward uniformity in entrepreneurial rewards in all fields.³³ Marshall, likewise, confined his observations on this matter to a few points: an entrepreneur will change his trade if he can thereby "improve his prospects";³⁴ and entrepreneurs move easily both "horizontally" (i.e., from an overcrowded trade to one which offers good openings) and "vertically" (i.e., from low to high posts within a business or industry).³⁵ There is no support for the easy horizontal movement, while passages to the effect that it takes two generations to rise in the business world make one doubt the seriousness of the contention that a vertical shifting of a would-be entrepreneur was easy in Marshall's day.³⁶ The contrast between the vigor and clarity of Ricardo's statement and the vagueness

²⁸ John Maynard Keynes, *The General Theory of Employment, Interest and Money* (New York, 1936), pp. 24-25, 77.

²⁹ *Ibid.*, p. 69.

³⁰ *Ibid.*, p. 136.

³¹ Ricardo, *op. cit.*, pp. 66-67.

³² *Ibid.*, pp. 137 and 286, for example.

³³ Mill, *op. cit.*, pp. 82, 412-413, 451-452.

³⁴ Marshall, *op. cit.*, p. 608.

³⁵ *Ibid.*, pp. 313, 662.

³⁶ *Ibid.*, p. 310.

of the scattered remarks of Mill and Marshall may not be accident or a matter of style; the proposition may have been more true at an early than at a late date. This may be a case that would illustrate the point that most propositions or principles of economics are more or less tied to time and place.

No one of the five treatises here considered yields any definite propositions concerning the behavior of an entrepreneur toward his competitors. Smith briefly pointed out that, while entrepreneurs strive to widen their markets, they vigorously try to narrow their competition.³⁷ To Mill the activeness of competition seemed to be positively correlated with the number of competitors. "Those who feel assured of a fair average proportion in the general business," he wrote, "are seldom eager to get a larger share by foregoing a portion of their profits. . . . When relieved from the immediate stimulus of competition, producers and dealers grow indifferent to the dictates of their ultimate pecuniary interest; preferring to the most hopeful prospects the present case of adhering to routine. A person who is already thriving, seldom puts himself out of his way to commence even a lucrative improvement, unless urged by the additional motive of fear lest some rival should supplant him by getting possession of it before him."³⁸ Marshall's contribution to propositions in this area is to be found in a footnote: the weakest entrepreneur in a combine is often its ruler.³⁹ The idea is that the weakest rules when he is necessary to get out a given volume of production or when he is necessary to present a seemingly competitive condition and ward off governmental intervention.

The entrepreneur's attitudes toward the amount of a good he will supply have been the object of extensive inquiry. It would be impossible and useless to try to present here the full array of propositions concerning this aspect of entrepreneurial behavior. This is the one area of entrepreneurship that has been rather fully explored, though it might be added that most of the exploration has been carried on under the assumption that the entrepreneur is striving to maximize profits. I shall state merely basic propositions relating to supply, four in number, without the elaborations that could be made on the basis of the five treatises. Concerning goods produced and in hand, Marshall maintained that what an entrepreneur is willing to offer at any given price depends upon his own need for cash and upon his estimates of the present and future market for his product.⁴⁰ Mill was less explicit; he maintained that entrepreneurs sell dear and supply more at higher prices.⁴¹

³⁷ Smith, *op. cit.*, I, p. 250.

³⁸ Mill, *op. cit.*, p. 932.

³⁹ Marshall, *op. cit.*, p. 375n.

⁴⁰ *Ibid.*, p. 332.

⁴¹ Mill, *op. cit.*, pp. 440, 447-448.

When the entrepreneur's plant is not operating at full capacity, Marshall contended, the entrepreneur often—"to fill up idle time"—accepts orders at prices that cover mere "special, direct, or prime costs," though he also at such times tries to cover as much of his other costs as he can without "spoiling the market."⁴² In the long run, on the other hand, the entrepreneur insists—if he is to remain in business—upon a price that covers his costs of production, including the cost of building up a trade connection.⁴³

For the fourth proposition on supply, Marshall's statement is also used. The entrepreneur who has an unrestrained monopoly position supplies his product "in such a way as to afford him the greatest possible total net revenue."⁴⁴ Marshall, however, pointed out that the entrepreneur may operate with either short-run or long-run maximum net revenue in mind and that for one or more reasons he may be willing to share his monopoly profits with consumers.⁴⁵

Keynes stressed heavily the role of expectations in entrepreneurial behavior and set forth a hypothesis concerning the basis for these expectations. He contended that producers operate upon "the assumption that the most recently realised results will continue, except in so far as there are definite reasons for expecting a change."⁴⁶

Statements concerning entrepreneurs' actions during the various phases of a business cycle appear in at least four of the books under consideration. What Ricardo and Mill had to say on this phase of entrepreneurial conduct is not of much interest.⁴⁷ Marshall, however, pointed out that when trade is slack a producer often tries to sell some of his surplus goods outside of his own particular market at prices that little more than cover prime costs, while within that market he still tries to sell at prices that nearly cover both prime and supplementary costs.⁴⁸ This is the familiar operation of dumping linked with a phase of the business cycle.

Keynes's explanation of business cycles runs largely in terms of changes in the expectations of entrepreneurs. In the later stages of a boom, they have optimistic expectations concerning the future yield of capital goods sufficiently strong to offset the growing abundance of these goods and their rising costs of production—and, probably, a rise in the rate of interest also.⁴⁹ A collapse in the marginal efficiency of capital, particularly in the case of those types of capital that have been

⁴² Marshall, *op. cit.*, pp. 359-361, 498.

⁴³ *Ibid.*, pp. 348, 359, 367, 377. For Mill's propositions in somewhat the same vein, see Mill, *op. cit.*, pp. 451, 466-467, 471, 480, 825.

⁴⁴ Marshall, *op. cit.*, p. 478.

⁴⁵ *Ibid.*, pp. 486, 489.

⁴⁶ Keynes, *op. cit.*, p. 51.

⁴⁷ See Ricardo, *op. cit.*, p. 282; and Mill, *op. cit.*, pp. 345, 644, 655-656.

⁴⁸ Marshall, *op. cit.*, p. 458.

⁴⁹ Keynes, *op. cit.*, p. 315.

contributing most to the previous phase of heavy new investment, produces a recession.⁵⁰ It is not then easy to revive the marginal efficiency of capital. Not only is the confidence of the business world difficult to restore, but time is required before a shortage of capital through use, etc., causes a sufficiently obvious scarcity to lead entrepreneurs to alter their expectations so as to increase the marginal efficiency of capital and until the carrying-costs of surplus stocks force entrepreneurs to dispose of them at sufficiently low prices to bring about their absorption.⁵¹ As surplus stocks disappear and a shortage of capital is observed, entrepreneurs revise their expectations, the marginal efficiency of capital rises, and the revival of business gets under way.

A look backward over these propositions concerning entrepreneurial behavior shows that they relate to many topics: the division of labor; the combination of factors of production; the limits of investment within a given field; the shifting of entrepreneurial activity from one company or industry or place to another; the relations between competing entrepreneurs; the attitudes toward the supply of a product; the bases of entrepreneurial expectations; and the actions of entrepreneurs that are associated with the different phases of the business cycle. The coverage is wide, but the "bag of tools" is far smaller than need be for further research.

But a number of propositions can be added from the writings both of those who have given special thought to the entrepreneur and those who have made observations concerning entrepreneurs as by-products of other investigations. For example, Schumpeter has contended that new combinations of productive means brought about by entrepreneurs are as a rule embodied "in new firms which generally do not arise out of the old ones but start producing beside them; . . . it is not the owner of stage-coaches who builds railways."⁵² In the light of recent corporate activities, it would seem that this proposition is more closely tied with the past than with the present. A proposition more important for his *Theory of Economic Development* is the one that these new combinations are not evenly distributed over time.⁵³ My own study of incorporations yields an observation of a similar nature: entrepreneurs operating as organizers of new corporations carry on their activities with a cyclical rhythm that parallels the business cycle but leads it by about 3½ months at troughs and by a somewhat smaller average interval at the peaks.⁵⁴

⁵⁰ *Ibid.*, p. 316.

⁵¹ *Ibid.*, pp. 317-318.

⁵² Schumpeter, *op. cit.*, p. 66.

⁵³ *Ibid.*, pp. 223 ff.

⁵⁴ *Business Incorporations in the United States, 1800-1943* (New York: National Bureau of Economic Research, No. 49, 1948), pp. 84-88.

To Keynes's and Marshall's propositions concerning investment directed by entrepreneurs, there might be added the idea that an entrepreneur is also guided in his expansion program both by a conception of a dream plant and by a desire to maintain at least his current share of a certain total market. R. A. Gordon, stressing the role of fear, has contended that the entrepreneur tries to achieve "reasonably satisfactory profits in the long run and a maximum of stability in his relations with customers, suppliers and competitors," and under changed circumstances no revision in price (and I would add dividends) "is likely to be made unless the business man is confident that the new situation will prevail for some considerable period—probably one normal planning period."⁵⁵

Propositions concerning entrepreneurs' motives and actions, usually briefly stated, are scattered throughout economic writings. A first task for further development of this area of economic thought would seem to be a collection, orderly arrangement, and verification—where that ought to be done—of existing propositions. Some of these will relate to one type of entrepreneur and not to another. Thus, some will and some will not relate to the process of change; some of the propositions will be quite definitely tied to time and place, while others will have wide applicability. Upon compilation I am sure it will be found that most existing propositions deal with the current actions of entrepreneurs rather than their expectations concerning the future, that they are static rather than dynamic propositions, and that a very large part of them deals with different ways of maximizing profits. The last assertion is ventured despite the fact that many writers stress the existence of motives that check, if they do not displace, the profit motive. More checks, incidentally, could easily be added to those set forth above—for example, fear of governmental interference and fear of labor hostility.

While the collection of existing propositions may be a first step in the creation of an orderly body of knowledge concerning entrepreneurship, it will, even if fairly exhaustively done, not yield more than a small part of what is needed. The private entrepreneur is the hub of our industrial wheel;⁵⁶ the capitalist system would fall apart without him. (So would any other economic system if the public, nonbusiness entrepreneur is removed.) Though the centrality of the entrepreneur suggests the wisdom of acquiring more knowledge about him and his decisions, the nature of the economist's method of work makes such knowledge imperative. Faced with a problem to solve, the economist must select the "best" hypotheses available and work from such a base. The more he knows of reality, the better the hypotheses can

⁵⁵ Gordon, *op. cit.*, pp. 271, 283.

⁵⁶ Cf. Marshall, *op. cit.*, p. 544.

be phrased and, presumably, the better his solution. If the vast majority of business leaders operate during the downswings of business cycles with a view to security, a large part of our price theory, built as it is upon maximizing profits, must be reworked; if an entrepreneur's investment decisions are appreciably influenced by a dream plant or some such consideration rather than by a comparison of the marginal efficiency of capital and the interest rate, another portion of economics must be revised; if the desire for stability of relations between an entrepreneur and his customers and competitors dominates the heads of the many business enterprises that operate in a more or less routine manner, much of existing theory concerning equilibrating forces is only partially applicable. Verified propositions concerning entrepreneurs' motives and actions are sorely needed. With these, more realistic theories for prices, cycles, etc., can be advanced. Modified economic theory built upon such new propositions will very likely lack the precision that economists working on the basis of profit maximization have achieved, but the result should be more useful in explaining the operation of our economic system.

In exploring for new propositions of entrepreneurship, I would try to distinguish the activities of the three types of entrepreneur I have referred to (the managing, the innovating, and the controlling entrepreneur), but I would not make isolated studies of each for the reasons given (the lack of purity in types and the possibility of shifting from one type to another). Entrepreneurs who are predominantly of the innovating and the controlling types are rather difficult to study because of both the wide range of their operations and the uniqueness of many of their decisions. The entrepreneur who is essentially a manager, trying to conserve the gains achieved by others, might, however, be expected to act in a more predictable manner. In spite of the difficulties, we should strive for a fairly definite set of rules of entrepreneurship concerning the following: the choice of products; methods of production; determination of current input and output; size and location of plant; mobility of investments; relations with competitors; marketing procedures; relations with government; and relations between entrepreneurs within a single business. The breakdown of the problem cannot, however, stop there. Actions concerning these matters cannot be expected to be the same in all situations: in all phases of the business cycle; for business units of different size; for growing as well as contracting units; in progressive, stationary, and declining industries; and in peace and war. All this indicates a most complicated problem, which can become even more complex if one takes cognizance of the changing personal situations under which the entrepreneur operates.

In closing I venture to suggest several hypotheses that might be

examined forthwith. These are crudely phrased; as study proceeds, they would be refined. In phrasing some of them, I have obviously leaned heavily upon the work of others cited in this paper.

Hypothesis 1. That innovators connected with going concerns and faced with many exploitable ideas tend to develop only those ideas that fit their long-range (rather than short-range) sales and production programs. Within this framework it is the most profitable ideas that are chosen for development.

Hypothesis 2. That the managing and controlling entrepreneurs of a business unit are dominated by fear of governmental interference when their concern acquires x per cent of the total national market for their product.

Hypothesis 3. That during the recession phase of a business cycle the managing and controlling entrepreneurs are guided in their business policies by a desire to maintain the safety of their concern.

Hypothesis 4. That the investment decisions of an innovating entrepreneur are governed by his dreams concerning the size and nature of his plant, by a comparison of the marginal efficiency of a capital asset and the rate of interest, and by a desire to maintain (and perhaps to increase up to the point of fear of invoking governmental intervention) his share of a more or less well-defined market.

Hypothesis 5. That an entrepreneur's expectations are built largely upon the changes taking place in the orders for his own products.

Hypothesis 6. That, just as in warfare the commander of an army tries to anchor one flank while giving some freedom of action to the other, an entrepreneur tries to give security to his business by means of a patent, a brand name, a favorable location, etc., while he tries to outmaneuver his competitors through the use of other means.

Hypothesis 7. That the rate at which imitating innovators copy the ideas of original innovators varies from industry to industry (at any one point in time) in accordance with the amount of fixed specialized capital required to reproduce the innovation, the legal restraints upon copying, and the secrecy of processes, etc., that can be maintained by those who first introduce the idea.

These hypotheses obviously lack precision, but statements such as these can serve as starting points for research. Some scholars will doubtless contend that the most worth-while propositions concerning entrepreneurs' motives and actions cannot be established by any method of inquiry. That may turn out to be the case, but defeat should not be accepted easily, for the stakes are high.

DISCUSSION

CARTER GOODRICH: The speakers have given us interesting papers and the contrast between the two provides a touchstone for demonstrating the predilections of the discussants. Professor Evans starts with a set of a priori propositions drawn from standard theory while Professor Easterbrook deals with the enterpriser in his social and political and economic setting in a way which I should describe, if I did not know that he would reject the term, as institutional.

Of Mr. Evans' hypotheses, the second seems particularly suggestive as a starting point for research. Direct studies of the hesitancy of businessmen to take more than a given per cent of the market may well provide significant evidence on the effect of antitrust legislation that cannot be gained either through the examination of court cases or through the statistics of concentration. Moreover, everyone who wishes to understand economic life will wish to second the speaker's plea for more behavioristic studies of entrepreneurial decisions generally—studies using, I might add, somewhat the same battery of methods as those employed in another field by the members of the Industrial Relations Research Association.

I am tempted to put one question regarding the behavior of Mr. Evans' hypothetical entrepreneur confronted with a falling demand for his product. This individual thinks of five possible courses of action but not of the expedient of improving his product. Does Mr. Evans intend to suggest that the old-fashioned solution of building a better mousetrap is entirely obsolete? The omission sounds Veblenian, but I note that the paper, unlike Scoville's account of his "Toledo Entrepreneurs,"¹ does not refer to Veblen's distinction between captains of finance and captains of industry.

I shall betray my own predilections by devoting the rest of my time to "The Climate of Enterprise." I welcome Mr. Easterbrook's emphasis on what Karl Polanyi would call the "embeddedness" of economic institutions in the entire social setting; and I agree that the entrepreneur—even the innovating one for all his boldness of maneuver and for all his importance for economic development—is more usefully thought of not as a sort of *deus ex machina* but as himself a somewhat tender plant requiring for survival particular conditions of social and psychological and political environment. In the historical view, as the author demonstrates, the existence of such an environment is much more the special than the general case. The attempt to specify these security conditions of enterprise, as a botanist might define the habitat of Labrador tea or the royal palm, should serve as a most fruitful approach to the study of economic history.

Governmental action toward enterprise may, as the author suggests, be protective and promotional as well as corrective or repressive. The purpose expressed in the preamble of the Employment Act of 1946—"to foster and

¹ Warren G. Scoville, *Revolution in Glassmaking* (Cambridge, 1948), pp. 272-273, 307n, 310n.

promote free competitive enterprise"—is by no means new in American history. The state may intervene to check the "restless desire" of enterprisers to seek more profitable employment, but on occasion it acts to stimulate what appear to be their sluggish desires. This at least is what Hamilton advocated in the Report on Manufactures. Or, to take a more humble illustration, consider the petition of the Upper Appomattox Company, directed in 1822 to the Virginia Board of Public Works, asking for "a little of the sunshine of public favor to set [them] in motion" and to give them confidence in the opportunities of enterprise.² It is only for a relatively short period in American history that there has been a rigorous separation of private and public business—if indeed it has ever been strictly rigorous. It was not merely such minor undertakings as the clearing of the Appomattox River or the proposed Mayville Road that were projected as joint private and public enterprises. The great modern corporations of the Pennsylvania Railroad and the Baltimore and Ohio had their origins in a mixture of private and municipal enterprise.

Mr. Easterbrook's paper is tightly packed and will require closer study before all its implications are fully understood. The theme of the relation between freedom of enterprise and other human freedoms particularly deserves reflection. One point on which I am not yet clear is the relation between his "ideal entrepreneur" and actual businessmen operating under various circumstances. Let me put a series of questions. Granted that enterprise needs political order and cannot thrive under conditions of "civil commotion," yet some people make money by buying and selling under just such conditions. Is the black marketeer an entrepreneur, or does he need some other name? Again, should a great London merchant like Sir Thomas Smyth be ruled outside the definition as a recipient of monopoly privileges? I think I know how Mr. Easterbrook would set out to answer the question the poet put into the merchant's mouth:

"How do we dare to seize
The commerce of barbaric Muscovy
The unimaginable trade of Ind?"³

They dared—the speaker would say—because Elizabeth had let Smyth out of the Tower, because their charters gave them certain privileges, because the England of their day was hospitable to treasure by foreign trade, and so on. But I am not sure whether Mr. Easterbrook would regard Sir Thomas as an entrepreneur.

Third, and of more immediate importance, I am not clear whether he thinks of the business world of the United States and Canada today as full of people who approximate closely enough to the ideal entrepreneur so that the prevailing system is in his sense free enterprise, or whether, in an age of the giant corporation and the great union and of multiform government

² Board of Public Works, *Seventh Annual Report* (Richmond, 1822), p. 66.

³ Stephen Vincent Benét, *Western Star* (New York, 1943), p. 35.

activity, what he describes as free market-oriented enterprise is in his view largely obsolete. Perhaps the answer lies behind his cryptic phrase, "if it is not too late."

"Entrepreneurial security" depends, the author argues, "on security against want for that part of the populace which matters politically." In our day, he points out, this includes security of the wage earners against mass unemployment. Figures of national income and employment provide more definite criteria than in the past; and the test must be met at a time when the phrase, "the performance of the economy," has come into the speech both of economists and laymen. If this is so, the future of freedom of enterprise must rest on the action of enterprisers contributing increasingly to industrial serviceability and to economic stability. It is a large order. Yet is not just this the goal of that type of framework planning—in fiscal policy and other fields—with which American economists of the day are so deeply concerned?

W. RUPERT MACLAURIN: Professor Evans has given us a very excellent survey of the economic writings on entrepreneurship. I agree that it is useful to see what the leading economic thinkers have written about entrepreneurship and what propositions emerge from their writings.

Yet I do not feel that Marshall's and Keynes's propositions as outlined are particularly insightful. Neither of these two great men knew very much about entrepreneurship; and neither of them made any special effort to focus attention upon it. This is an interesting phenomenon in itself, though outside the scope of our panel. I am afraid, therefore, that Evans' eight hypotheses, based as they are primarily on the writings of the classicists, are not particularly valuable. But Evans, I am sure, would be the first to admit this. The important thing is to make a start, and I am not at all confident that I could offer a better set of hypotheses.

Under Arthur Cole's leadership a group of us, including Evans and myself, have struggled for some time over ways and means of exploring the field of entrepreneurship, and we have all found ourselves floundering in a morass. We have decided, therefore, to stop worrying about definitions and hypotheses and plunge into the subject on the basis of our own particular predilections.

In criticizing Professor Evans' paper in detail I should like to take as my text the following statement in the paper:

Emphasis upon the entrepreneur as a person has another drawback. He who makes "the desert bloom" is often a very colorful person; a study of him in consequence is likely to turn into a romantic product. It would seem the part of wisdom to center research in the field of entrepreneurship—for the time being, at least—upon entrepreneurial decisions and their repercussions. These can probably be analyzed and appraised in a critical fashion.

I have no quarrel with Evans' own desire to take a functional approach to the study of entrepreneurship, but I do think that some economists should explore the personality factors in entrepreneurship—no matter how difficult it may be. Economics has long been known as the dismal science. There is no need to go out of our way to make it more dismal just because the entrepreneur has "a romantic side." On this point, as on so many others,

Professor Schumpeter has shown exceptional understanding in centering attention on the key role of the personality of the innovator in economic development.

If economists wish to study entrepreneurship, they should not be afraid to make use of the other social sciences. I should like to suggest as possible tools of analysis the writings of the Freudian psychologists who have been interested in this field: for example, Harry Murray's *Explorations in Personality* and the new book by Murray and Kluckhohn, *Personality in Nature, Society and Culture*.

Not that I have found that the psychologists have gone much further than the economic theorists in exploring the dynamics of the creative process, but their concepts should be used along with economic concepts for a full exploration of this challenging and extremely elusive field. It seems obvious, for example, that, if we are to understand entrepreneurial decisions, we need to know more about the motivations and drives of innovating entrepreneurs. We also need to understand the influence of the "top-management group" on decisions. Decisions today are seldom made by one man. They are increasingly "talked out" by a group. There is almost always a group leader, but his followers also play a vital role in decision making.

I would suggest that the problems of entrepreneurship can best be studied by a group of scientists from different disciplines—economics, psychology, political science, and, if the decisions are technical, engineering. To include the latter field is particularly difficult; yet the fact remains that in many modern industries the really key decisions are about new technological moves to make. I have been studying a number of industries which have a close relationship with the engineering sciences, and in most of these industries products have been changing radically every few years. In these circumstances, the prosperity of the firm depends upon being "in" on the new developments at the beginning rather than in maximizing profits on established products.

I believe this fact to be of profound importance and am of the opinion that it will require the scrapping of much of our existing theory as a useful tool for studying modern economic development.

JOSEPH J. SPENGLER: I have heard these papers with profit and pleasure. In my comments I shall try to examine each paper in terms of the other. In so doing I shall almost inevitably do less than justice to the carefully qualified observations of each speaker.

Three analytically distinguishable approaches may be made to the study of the role of the entrepreneur, but none may be emphasized to the exclusion of the others. At one extreme we find the approach of the theoretical economist who, having squeezed time and space out of the processes connecting events, presents us with definitions and theorems remindful of Euclid. At the other extreme we encounter the approach of the pure business historian who is concerned with unique persons and concrete events having specific and definite location in time and space. At a way-station not too removed from the former extreme we meet the "ideal-type" approach of Weber, which employs

constructs abstracted from the concrete but not so unconcrete as those used by the economic theorist. Professor Evans' approach is somewhat remindful of the first of these three and Professor Easterbrook's of the last.

We may conceive of the entrepreneur as a single person or, as in the case of partnerships and corporations, as a multiple person who performs certain economic tasks. Or we may conceive of a set of economic tasks that need to be done and are done, and we may label this set the entrepreneurial function. If this set is performed by one or more persons located within a firm it is readily determinable who carries out the entrepreneurial function. If, however, the course of behavior of a firm is guided both by the decisions of those located within the firm and by those of certain persons located outside the firm (e.g., by members of ancillary or competitive firms, by friends, by counselors), it becomes harder to determine completely who executes the entrepreneurial function. If we are concerned with the locus of all business decision making in an economic society, we probably need to take both inside and outside persons into account. In any event employment of the first concept will not necessarily isolate the same person or persons as will employment of the second concept which is more inclusive.

If one employs the personal concept, one encounters all sorts of entrepreneurs ranging from those in whom the dull routinist is ascendant to those in whom Schumpeter's lively innovator sparkles, for both single- and multiple-persons differ widely in aptitude, personality, propensity, and industrio-environmental impact to which subject. If one employs the second functional concept, the variation from entrepreneur to entrepreneur will be governed principally by the manner in which the tasks are allotted. If we define as an entrepreneur only an individual performing all of a designated set of tasks, there can be little variation. But if we define as an entrepreneur any one of a number of individuals who perform each some minimum number of varying tasks, we introduce a wide range of inter-entrepreneur differences.

Professor Evans' account reveals the superiority of the second concept whilst Professor Easterbrook's findings indicate that the division among persons of the tasks composing the entrepreneurial function is not constant but, as a result of variations in time and place, differs respecting their comparative importance and who performs them. These conditions vary, for example, with the degree of security prevailing; and, as Professor Schumpeter has shown, they may vary with the degree of bureaucratization of business.

Professor Evans' sometime treatment of the entrepreneurial function as a comparative constant is probably justified by the fact that the periods then under consideration have been relatively short and stable. Constancy may not be assumed, however, if a long period of time is involved. For then the tasks composing the entrepreneurial function get redivided; the technical equipment (e.g., instruments of communication) available for the carrying out of some of these tasks is altered; and the motives and objectives animating entrepreneurial persons undergo change in consequence of modifications of the social structure and the underlying value pattern.

Professor Evans' hypotheses are useful and interesting. Yet some modification of them seems to be in order. In general they appear too time-bound, too oriented to the present, and possibly not wholly consistent. The first unduly freezes the long-run plan, and therefore needs to be put in more fluid terms. The second appears to be valid only in essentially oligopolistic industries in a country whose government employs stability of percentage of business done as evidence of prosecutable action. Again one may postulate too great a stability on the part of combinations. The fourth is applicable in part to the large-scale multiple-person entrepreneur provided that the dream-boat objective, which is not too likely to commend itself to a committee, is excluded. The fifth may be valid; but is it corroborated by stock-market behavior? I miss a hypothesis respecting the entrepreneur's relations with labor, often his most important cost of production and frequently of significance for his relations with his competitors. I should like also a hypothesis relating contemporary psychology to entrepreneurial motives.

What strikes me as most unreal in discussions of entrepreneurship is the commonly implied assumption that decisions are made for comparatively autonomous business organizations by one or a few easily identifiable persons, and that firms do not vary greatly in sensitivity to public opinion, in length of time horizon, in type of entrepreneurial person selected, and so on. It is more in keeping with reality to think of the business firm—particularly the larger and more bureaucratized ones—as a kind of social organism having institutional purposes and subject to a variety of internal stresses, strains, impulses, and so on. Much ultimate decision making is selective rather than creative in character, since the creative impulse often originates in the lower echelons. Seldom is the genesis of executed action so simple as the supposedly complicated genesis of action terminating the last act of "Command Decision." Rather the genesis of decisions embraces the actions of many individuals at many levels and reflects the importance of personality differences, modes of intrafirm communication, etc. Moreover, since different kinds of business, because of the differences in their objectives, probably tend to select somewhat different types of personalities, the execution of the entrepreneurial function probably varies from one line of business to another.

Professor Easterbrook intentionally emphasizes that to which Professor Evans of necessity has given little attention; namely, the influence exercised upon the entrepreneur by the physical and the social milieu within which he works. But he does not clearly identify the type of entrepreneur he has in mind. If he is thinking in terms of the personal entrepreneur, then he should consider the selective influence of the entrepreneur's milieu and the degree to which the entrepreneur can modify his milieu or bend it to his purposes. Some of Pirenne's work is quite suggestive along these lines. If Professor Easterbrook has in mind the functional concept of entrepreneur, he should indicate how the tasks composing this function change through time, how the division of these tasks among persons is modified, and how motives animating entrepreneurs change in number and content. If the social structure is Byzantine and the framework of rules is rigid and precise, there

will be much less scope for entrepreneurial tasks than when an opposite set of conditions prevails; there will be fewer matters to decide and to be susceptible of modification. Since intrafirm co-ordination is a function of interfirm co-ordination, the entrepreneurial function may be examined also in terms of the changing distribution of the responsibility for co-ordinating economic activities. In general, therefore, the economic historian may look both for redistributions of entrepreneurial tasks and for changes in their quantity and in the motives generating their performance.

Professor Easterbrook implies that the dispersion of economic power is not the only means of maximizing individual freedom of action. Unfortunately this proposition is not easily put in operationally satisfactory terms. Nonetheless, I have a hunch that it will be hard to find a satisfactory and practical alternative route to maximized freedom. I doubt whether the desire for peace and quiet is as universal as is suggested by Professor Easterbrook. There is in his paper also an implication of great import for the history of tomorrow: that unless the struggle between the economies of the West and the "communism" of Russia and her satellites is shortly resolved, entrepreneurship as we have known it is finished for a long time to come even though the Russian system is brought to term. Several decades hence we may check the validity of this implication.

THE ECONOMICS OF PREPAREDNESS FOR WAR

FISCAL ASPECTS OF PREPAREDNESS FOR WAR

By ARTHUR SMITHIES

Economic Co-operation Administration

I

A few years ago we used to consider it an act of mild political daring for government officials to speak of postwar federal budgets of from 25 to 30 billion dollars. So-called "experts" outside the government found it possible to strain their imaginations up to figures like 17.5 billion dollars. Some authorities reached low figures of about 12 billions.

Now it is agreed by everyone that a federal budget of less than 40 billion dollars is out of the question for the foreseeable future; and one can contemplate budgets of 50 or 60 billions and still remain sound and respectable. Furthermore, prospects of reduced expenditures, except during election campaigns, are viewed with alarm by the business community.

One reason for this sea change is that Keynesian thinking has had a far more persuasive influence than many would dare to admit. The simple laws of aggregate demand can no longer be kept hushed up, and business, labor, and the stock exchange frequently apply crude caricatures of the Keynesian theories that would have made their author shudder.

But the major reason for the acceptance of high budget figures is that the projected increases in expenditures go in the main for national defense and foreign aid rather than for education, public health, and social security. In fact, it seems that the more the behavior of a capitalistic economy corresponds to the Marxian diagnosis, the more acceptable it becomes. And a further paradox of the modern world is that its archenemy takes immense pains to provide capitalism with the props that it asserts our system needs for its survival.

However, complacency about high expenditures tends to evaporate if it becomes evident that high expenditures mean tax increases or a resort to direct controls over business or labor. Recent political events in this country have produced reactions that seem to indicate that the prospect of controls is a bearish factor, outweighing the bullish influence of the prospect of higher expenditures.

There seems to be a widely held belief that with the defense expenditures in prospect, we must resort to the use of direct controls over

quantities produced or consumed or over prices. The indirect approach through fiscal and monetary controls is held to be inadequate.

Since we may well be embarking on a long period of cold war, decisions made in the next year or two can have a lasting effect on the economic system of the country. Control measures, especially when introduced in peacetime, have a strong tendency to create vested interests in their continuation.

II

One striking difference between the present situation and wartime mobilization is that we now have no very precise idea of what we are up against. If we were mobilizing for war, it would be necessary to maximize the output available for military purposes, and that would mean that nonmilitary government and private expenditures should be cut to the maximum extent consistent with the war effort. We would aim possibly at devoting 50 per cent of gross national product to war purposes.

As it is, it seems to me highly improbable that the federal budget will exceed 25 per cent of the gross national product in the next few years and my own guess would put the upper limit nearer 20 per cent. For the coming fiscal year the budget shortly to be proposed by the President should, I think, total between 43 and 44 billion dollars compared with a gross national product of 250 billions.

Large though that figure is, it is not large enough to dominate the civilian economy. With full-scale mobilization, full employment is inevitable. With cold war mobilization, I would say that full employment, while readily attainable given proper policies and foresight, is by no means inevitable. I believe it is quite possible to have a depression and a fifty-billion-dollar budget at the same time—provided we do the wrong things. In fact, that danger may be confronting us today. There are indications that the postwar investment and consumption boom is over, and that with present tax rates and present rates of government expenditures, we are headed for a depression. In that event the increased military expenditures in prospect may be no more than sufficient to maintain full employment. At the present time we do not know whether policy must be designed now to meet potential inflation or potential deflation in fiscal 1950.

Policy at the present time, therefore, must be based on a strategic assumption rather than a forecast. We should adopt that policy which we would least mind being wrong. Is it better to prepare for inflation and get deflation or to plan to meet deflation and get inflation? Broadly speaking, the choice of policy depends on which of those possible mistakes is considered the more serious.

In weighing that question, we should not forget that there is no reason, in any event, to expect a depression of the severity of 1933. While the federal budget is not large enough to avert a depression, it is large enough to put a substantial floor under national income and employment. Furthermore there is still some independent steam in the private economy in such fields as automobiles, railroad equipment, public utilities, and residential building. In my judgment, the contingency we might face is a depression and not a collapse.

Furthermore, a mild depression would have one redeeming virtue in that it would release resources from private employment and so remove some of the need to use compulsion or pressure to get defense production under way.

Considerations such as these lead me to the view that policy at the present time should be directed to preventing further inflation rather than to averting depression. I consider it superfluous here to argue the need to prevent more inflation than we have already had. However, the possibilities of further inflation do not appear serious enough to warrant the conclusion that some risks in that direction are not justified.

What this means in my opinion is that direct controls should not be instituted at the present time, but that fiscal and monetary policy should be relied on for any counter-inflationary action that may be needed. But to state these conclusions now is to anticipate my main argument.

III

My chief purpose is not to comment on the present situation but to discuss the policy issues of a preparedness economy in more general terms. From the point of view of policy we have to answer two main questions. First, how much should be spent on defense and what changes should be made in the nondefense expenditures of government under the impact of a large increase in defense expenditures? Second, by what means should private expenditures be curtailed to make room for the increased expenditures on defense? Should the curtailment be accomplished by fiscal and monetary controls or should principal reliance be placed on direct controls over quantities and prices of commodities? I am assuming that, whatever the situation in fiscal 1950, increased defense expenditures will produce inflationary pressure before the cold war is over. As we shall see, these questions cannot be discussed independently of each other. What the government can and should spend depends essentially on the measures it is prepared to take to finance the expenditures and on the consequences of resorting to direct controls in the event that fiscal measures have to be supplemented by them.

By raising these questions as budgetary matters, I am making an essential distinction between the preparedness economy and a war economy. During the last war the budgetary process was virtually suspended so far as war expenditures were concerned. Appropriations far in excess of expenditures were made at the outset of the war for indefinite periods and at the end of the war some 70 billion dollars were unused. This meant that the military program was placed in the control of the civilian and military production authorities. Rival military and civilian claims to the national output were settled in the War Production Board rather than in the financial committees of the Legislature.

I consider it of the highest importance that the wartime methods be avoided at the present time. We are assuming that a world settlement can be reached without a third world war, but no one assumes that the process will be a short one. Our democratic institutions can stand a wartime suspension of the budgetary process for a period of three years, but here we are concerned with a state of affairs that might last for ten years or for a generation. To exempt the military program from budgetary control either by the Legislature or the Executive for a decade or more could only mean a serious weakening of our political system. I shall therefore continue to assume that the budgetary process is kept intact.

IV

Turning now to the question of expenditures, specifically, it cannot be repeated too often that military expenditures should not be determined by the military authorities alone and that they should be the subject of political debate. This is especially true since our international objectives at the present time are defined in political rather than in military terms.

The last three years, with the Chinese disaster as a climax, have convincingly demonstrated that security cannot be conceived of in military terms alone. The European Recovery Program is our recognition of this fact. As a purely economic venture, there may be room for debate about the wisdom of that program. To be convinced of its value as a security measure, one has only to contemplate what probably would have occurred in Europe without it. But dollars are not enough for success—they could buy failure. Success requires political leadership from this country as well as military strength, and the leadership we can exercise abroad cannot be separated from the political situation at home. The political and economic prospects of this country have already become a matter of great concern to those whom we invite to accept our tutelage.

These matters have a direct bearing on the size of the defense

budget. On the one hand, we cannot achieve security without a large military program. On the other, we cannot ignore the price we have to pay for that program in terms of its political and economic effects on the domestic economy. For example, suppose we knew that the only feasible way to finance the military program would produce a chronic state of inflation. In that event, the military program itself would undoubtedly be reconsidered. The fact that the program would cause inflation means that the country is unwilling to pay the price of it. The political leadership might decide whether the international situation warranted the domestic instability that would be caused by imposing on the country a program that it was not yet ready to accept. On the other hand, it might decide to take greater military risks for the sake of keeping greater domestic stability, recognizing that domestic stability as well as military strength will further our international objectives.

That same question arises not only when we have a sharp issue between stability and instability. It arises also when the various methods of achieving stability are considered. I shall argue later that if direct controls are the only feasible means of keeping stability, a program is more open to question than if stability could be accomplished through fiscal or monetary methods.

The other main expenditure issue is the course that should be pursued with respect to nondefense programs. Should we resolutely maintain that defense needs are so grave that this is no time for the government to be embarking on programs for better education, better housing, better health, and greater social security? Or should we take the point of view that this country cannot exercise the political leadership that is required of it if the military program is to be used as an argument for reversing the political and social trends that keep us more or less in step with our principal allies abroad? I believe we must take the latter point of view but should recognize that all claims on the budget cannot be met. We should also recollect, however, that the cost of defense runs into billions while that of most welfare programs is measured in millions. A small cut in the defense program could provide the funds to transform our educational system, and, paradoxical though it may sound, such a shift might contribute to national security as well as to human welfare.

V

Let us now consider the problem of economic stabilization raised by an expanded defense program. We are assuming that to avoid continuing inflation it is necessary to take new measures to cut down private expenditures, and the question is whether this reduction should

be brought about by fiscal and monetary measures, such as higher taxes and compulsory savings supplemented by higher interest rates, or whether direct controls over expenditures such as price control and quantity rationing or expenditure rationing should be employed.

What I have already said leads to a strong preference for using fiscal controls which are the product of the budgetary process rather than direct controls whose effect on expenditures depends on administrative action. For the willingness to levy the necessary taxes should be regarded as part of the decision to undertake the defense program. A country that is willing to face the cost of what it wants to do is politically stronger than one that is willing to defend itself only when it can delude itself through direct controls that it is not paying the bill.

Judging by the experience of most belligerents in the last war, direct controls are politically easier to impose than fiscal controls. The reason for this is largely that people could be deluded into believing that their real incomes are equal to their money incomes divided by the official cost-of-living index. So long as such a public attitude persists, it is possible for the government to provide incentives to effort and restrict civilian supply at the same time.

The belief could be less than a delusion if the period of control were short. Although wartime savings helped to produce postwar inflation in this country, they also helped to keep postwar production at higher levels than it otherwise would be. It seems to me fair to say that the wartime savings induced by controls in this country were far from illusory although smaller in real value than most savers had anticipated.

Since we should base our present plans on a considerably longer period than three years, our own wartime experience cannot be regarded as a useful guide. The European countries that have kept controls for almost a decade are more relevant. There seems to be little historical ground for the optimistic belief that, once the emergency is over, it is necessary to keep the controls only for a limited period during which production catches up with demand. Most countries that have kept controls for the postwar years seem to be confronted with the dilemma that if they remove the controls the inflation will be too great to be palatable while if they keep controls production will lag and incentives suffer.

The war gave us the modern miracle of price control; its aftermath has taught us that the state of suppressed inflation that price control engenders brings with it difficulties no less damaging than the open inflation it is designed to avoid. While open inflation depreciates the value of savings, suppressed inflation depreciates incomes by keeping the real value of past savings intact.

It may be objected that European experience is irrelevant for us, since we are unlikely to encounter suppressed inflation anything like as acute as theirs. I would argue that this objection is untenable since the essential purpose of general price control is to achieve a state of suppressed inflation. If there is no suppressed inflation there is no need for general price control.

The demand for direct controls in preference to or in addition to fiscal controls arises also from specific commodity situations. Even though fiscal policy may release the resources needed for the defense program, it may not achieve a socially acceptable distribution of the amounts available for nondefense purposes. If, for instance, the market mechanism were relied on to achieve a fair distribution of gasoline, it may well be necessary to resort to taxation of higher incomes of much greater severity than is necessary to obtain the necessary reduction in aggregate demand. Otherwise consumers with high incomes would bid up prices to such an extent that those with low incomes were forced to abandon their automobiles—which would be an unthinkable hardship. It is too much to expect that any country would be willing to tax itself to the required extent, and if the demands of the defense program are large enough, it seems inevitable that rationing will be undertaken.

There is no serious objection to the rationing of some essential commodities, provided the practice does not spread. But that is very likely. Administrators seem to have a chronic tendency to seek the easy way out of their difficulties by committing the cardinal sin of overallocation. Overallocation means price increases and demands for price controls. Furthermore, it is difficult politically to restrict controls to the areas where they are really needed. The control field tends to get widened in the hallowed name of nondiscrimination. An innocuous system of selective quantitative controls over essentials could easily become a thoroughgoing system of price and quantity controls.

Quite apart from the disruptive effects of suppressed inflation, the disadvantages of subjecting the automatic pricing mechanism to administration constitute a weighty objection to reliance on direct controls. Whatever its imperfections, the price system does distribute commodities with a minimum of friction. However well direct controls are administered, they give rise to shortages, complaints, and abuse. I know of no one who has had experience in the administration of controls who would urge their resumption if they could be avoided.

VI

I believe my strictures on direct controls would command a wide measure of agreement among economists. Nevertheless it would be

argued that it would not be feasible to accomplish any appreciable degree of mobilization without them. And if controls are introduced to achieve mobilization, they are likely to be retained after the mobilization period is over.

Let us now examine the force of these contentions by considering whether mobilization could be accomplished by a policy that aimed at restricting civilian demand through taxation and monetary policy and transferring materials and labor to the government through the price and wage mechanisms.

We can say at the outset that such a policy would not be feasible unless it involved substantial increases in individual prices and wages and consequently in the general price and wage level. If fiscal and monetary policy were to make possible the transfer of resources with no such increase, it would be necessary to rely entirely on the income effects on demand to obtain the necessary release of particular resources; and the demand for goods unrelated to defense would have to be reduced along with the demand for those needed for the military program. If the government can use the price mechanism freely, it can produce both income and substitution effects on demands. If that is done, fiscal and monetary policy need only produce the required aggregate reduction in civilian demand. It does not need to be concerned with the demand for individual products. (In this discussion I am speaking of mobilization from a full employment situation such as we have today; if we begin from a condition of unemployment, the task is that much easier.)

I am quite prepared to contemplate a planned increase in the general price level as an incident of mobilization, especially if it can serve as a substitute for extensive direct controls. Although the postwar price increases in this country have undoubtedly caused hardship to some groups, it seems to me that the country has adjusted itself to the changes more readily than any economist would have admitted in advance. Even the "fixed" incomes of economists have shown some welcome tendency to increase.

It is also possible that a planned price increase, supported by fiscal policy, during the mobilization period might forestall price increases later on. Had the policy I am now suggesting been feasible in this country during the war, we would have ended the war with a higher price level but a smaller "monetary overhang" at least in real terms. In that event it is fair to assume that the postwar inflation would have been smaller.

From a logical point of view it is almost a tautology to conclude that mobilization could be accomplished in the way I have described. Unless demands were completely inelastic with respect to price, a

combination of bidding up prices and contracting civilian demand through fiscal and monetary policy could accomplish the desired result. However, there are serious objections to such a policy that would almost certainly rule it out in some circumstances.

In the first place it is extremely unlikely that mobilization could be accomplished as swiftly through the price mechanism as through direct controls over production or consumption. But from the present point of view, it is not clear whether such swiftness is needed as to require rejection of the slower method.

Secondly, depending on the degree of mobilization, the planned price increase might be a very large one. While the government's entry into the market for materials would tend to restrict normal civilian demand, it might well tend to encourage speculative demand for inventories. There is danger that in the face of such demands the resolution of the government would weaken.

Thirdly, and this is the most important point, there would be large increases in profits in the industries where the price increases took place. For better or for worse, we have reached a stage in our development where profits are a matter of public as well as private concern. If there were a large increase in the profits of, say, the steel industry, there would undoubtedly be new wage demands and that might be enough to start off a general inflationary wage-price spiral. This point is, of course, well recognized by the "industrial statesmanship" that gives rise to anomalies such as the grey market.

There is one way in which that difficulty could be at least partially solved. What is needed is a tax system that would permit government to offer and industry to charge the prices that are required to get the desired allocation of resources, but would hold profits down to an acceptable level. While there might be technical difficulties in adapting the tax system to this objective, I cannot believe they are insuperable. A system of selective excise taxes seems to offer the most promise. Not the least of the advantages of such taxes would be that business could be spared the dilemmas of industrial statesmanship.

In view of these objections to complete reliance on pricing and fiscal policy, I conclude that any substantial degree of mobilization requires the use of direct quantitative controls. In my opinion, these controls should be confined as far as possible to set-aside orders in favor of the government, and civilian users should compete for what is left. As I have said above, once allocations or end-product limitations are undertaken, both political and administrative difficulties multiply. If allocations are resorted to, all possible efforts should be made to avoid the pressures that will undoubtedly arise to introduce price controls as well.

VII

In the discussion so far, I have hardly touched on what is perhaps the major problem, not only of a preparedness economy, but of any full employment economy; namely, the wage-price question. Is it to be accepted as a fact that except in times of severe depression, money wages will have a chronic tendency to rise faster than the productivity of labor and so to force prices up with them? Does labor insist on bargaining for a steady increase in real wages? Or will labor settle for an equitable division of the product? And in a preparedness economy where the government is the purchaser of a sizable part of the national product, can the government fail to have a national wage policy?

If the government undertakes to stabilize money wages, it is almost compelled to undertake to stabilize the cost of living. We may be forced into full-scale price control by the need to establish wage control. If that is to be the outcome, most of the discussion of this paper is beside the point.

Before this fatalistic conclusion is reached, I hope the possibilities of fiscal policy can be thoroughly explored and that statesmanship can center attention on the relative distributive shares after taxes. If the tax system were such as to prevent undue profits from preparedness, is it out of the question to expect that labor would agree to a wage policy that is consistent with price stability? On this I can merely venture a hope, not make a prediction.

VIII

I have already stated what I think should be done in the coming year, and I hope my subsequent argument has supported my point of view. Beyond that I believe it is too early for the government to make commitments. But it is not too early to debate questions of principle. The two main principles I have sought to establish are, first, that in a long period of preparedness, the military program should be subject to the full control of the budgetary process and democratic decision; and, second, that we should re-examine the effectiveness of the pricing system and fiscal and monetary policy to accomplish the desired allocation of resources and rely on them to the fullest extent possible.

Direct controls are mainly the product of political pressure rather than of economic need. They stem from lack of political resolution to face the cost of discharging our national responsibilities. As economists we should lose no opportunity to point out that the cost of political weakness is high in terms of economic effectiveness.

PREPAREDNESS FOR WAR AND GENERAL ECONOMIC POLICY

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Introduction

It has become necessary to prepare ourselves for a potential war emergency even though we have not as yet reconverted entirely from the recent war. Unlike the period from 1939 on, the additional military-security demands are superimposed upon an economy with high employment, with its physical plant operating near peak capacity, and with enormous, active, and potential inflationary pressures. In this paper I shall analyze the implications of the military-security expenditures in terms of national economic policy, especially the problem of governmental economic controls over the economy, taking as my point of departure the calendar year 1950 in relation to the calendar year 1948. For these years I shall use as a basis for analysis some preliminary estimates of the cost of national defense, governmental, and selected private programs as summarized in the following table.

PRELIMINARY ESTIMATES OF THE COST OF NATIONAL DEFENSE, GOVERNMENT AND
SELECTED PRIVATE PROGRAMS FOR CALENDAR YEARS 1948 AND 1950
(Amounts in Billions of 1948 Dollars)*

	1948 PRELIMINARY	1950 PROJECTED	CHANGE 1948 to 1950
I. Direct military program	12 to 12½	15 to 20	+3 to +8
II. Related defense programs†	½	1	½ to ½
III. Foreign relief and reconstruction‡	4½ to 5	7 to 8	+2½ to +3½
IV. Public works (federal, state, and local)§	4	5½ to 6½	+1½ to +2½
V. Gross private domestic investment¶	28½	26 to 30	-2½ to +1½
VI. Private residential construction (nonfarm)	7	5 to 6½	-2 to -½
VII. Other governmental programs			
A. Health, education and general research (federal government)**	½	1	+½
B. Federal programs not elsewhere classified	21½ to 22½	20 to 22	-1½ to +½
C. State and local (other than public works)	12	12 to 13	0 to +1
Grand total	90½ to 92½	92½ to 108	2 to 17½

* Rounded to the nearest half billion. Estimates assume the continuance of the present price level.

† Includes atomic energy, shipbuilding, Panama Canal, and Alaskan area programs.

‡ Includes all government sponsored foreign assistance programs plus provisions for foreign military aid.

§ Includes public housing; excludes military construction.

¶ Excludes residential nonfarm construction, which is shown separately, and change in business inventories.

** Excludes construction programs, which are included under public works.

These estimates are stated only in round numbers and should not be taken as official figures. They are introduced into this discussion merely to set quantitative, and to some extent hypothetical, boundaries for purposes of analysis. They do, of course, bear some relation to the realities of the present situation in this country and represent interpretations of possible situations in 1950. Needless to say, any number of variations could be introduced in the estimates through different assumptions. The totals were derived on the assumption of the maintenance of the present price level and should, of course, be revised downward to some extent if the present indications that the postwar boom has spent itself turn out to be true. The range of the magnitudes for 1950 derive from assumptions as to the relative increase above or decrease from or maintenance of the 1948 rates. Thus, for example, sufficient decreases might occur in gross private domestic investment, private residential construction, and miscellaneous federal expenditures to come within two billions of balancing the minimum expansion of military, foreign aid, and public works expenditures as indicated by the lower limit of the 1950 estimates. At the other extreme, a net additional, hypothetical burden of $17\frac{1}{2}$ billion dollars could occur within the bounds of the estimates for 1950. All of these estimates were made conservatively. Thus, the upper limit of military expenditures used was 20 billions instead of higher figures that have at times been proposed. Likewise, these totals typically reflect merely a median of estimates of proposals and do not at all include the larger and brighter hopes and dreams in the fields of foreign relief, housing, health, and education, let alone the improvement of our security position through any number of programs that could be proposed for the improvement of the nation's physical resources beyond those included. The widest range of possible error is in the heterogeneous category, "Federal programs not elsewhere classified." Perhaps such errors are compensatory.

Thus these data are intended to set the problem conservatively as a basis for analyzing whether the economy of this country could undertake military-security obligations such as these without fundamental readjustments and comprehensive controls.¹ The interest of the analysis is not identical with that of the current anti-inflationary discussion.

Present Economic Controls Over the Economy

A brief glimpse of the existing pattern of controls will indicate the base upon which further controls, if necessary, must be built. At the

¹ I am indebted to my colleague at the National Security Resources Board, Haskell P. Wald, for preparing the quantitative estimates.

end of 1948 the United States economy is still subject to a few heritages of World War II economic controls as well as a number that have been added since the war. Thus rent controls in modified form are still with us and presumably will continue for at least another year. In addition, the 80th Congress, in Public Law 905, reintroduced consumer credit controls together with authority for raising bank reserves under the jurisdiction of the Board of Governors of the Federal Reserve System. Needless to say, our entire framework of fiscal and monetary policies must reflect not only the heritage of the past war and the preparedness and security measures necessitated by the present world situation but also the general economic drift.

The comprehensive system of wartime industrial and economic controls built up to facilitate the mobilization of the resources of the nation survives chiefly in the Second Decontrol Act of 1947, as extended by Public Laws 395 and 606 of the 80th Congress. Thus there remain vestiges of (a) export controls, (b) export priorities, (c) import controls, (d) rail transportation controls, and (e) domestic allocation and distribution controls.²

² See the *Fourth Quarterly Report* of the Secretary of Commerce, August, 1948.

a) The program of export controls which is currently in effect is designed (1) to restrain the potential inflationary impact of foreign demand, both by holding down the price level at which this demand enters our market and by limiting the over-all quantity of shipments abroad; (2) to exercise the necessary vigilance over exports of industrial commodities significant from the standpoint of the security of the United States; and (3) to influence the geographic distribution of scarce materials supplied by the United States in a manner most conducive to speedy and durable world recovery. During 1948 the commodities over which controls were applied (i.e., the commodities on the Positive List) constituted about 30 per cent of our total exports. Foodstuffs, fuel, and metals account for the bulk of the total value of export trade in Positive List commodities. This program of controls was strengthened by Public Law 395 which (1) extended section 6(d) of the Act of July 2, 1940 (54 Stat. 714) a year to February 28, 1949, (2) authorized the use of price criteria in the licensing of exports, and (3) provided additional funds. Consequently, the list of commodities in short supply under export controls has been expanded, and export transactions at "clearly excessive or exorbitant prices" have been eliminated "at least so far as the Positive List of commodities is concerned."

b) A qualified export priorities assistance program is also authorized in the Second Decontrol Act. Export priorities may be granted "only where a material is needed to maintain or expand production of commodities which are in critically short supply in the United States, or where the Secretary of State certifies that such assistance is essential to the success of the United States foreign policy." Such priority assistance has been given primarily to the "procurement of minimum quantities of nitrogen fertilizer and tinplate to be used for agricultural production and food preservation abroad."

c) Import controls over pig tin, nitrogen fertilizer, fats and oils, and rice and rice products are authorized under the Second Decontrol Act because of United States participation in international allocating bodies which recommend the import and export distribution of these commodities on a world-wide basis. Presently, controls are being exercised over fats and oils and rice and rice products.

d) Loading regulations and allocation controls over the use of rail transportation equipment and facilities are being used "to promote the efficient utilization of available freight cars and to assure the use of these cars in a manner consistent with the best national interests."

e) Domestic allocation and distribution controls under the Second Decontrol Act are limited now to tin and tin products and antimony. Such controls are needed because of

Public Laws 395 and 759, the Selective Service Act, approved December 30, 1947, and June 24, 1948, respectively, set the stage for the current domestic regulatory procedures. The most important provision of Public Law 395 authorizes the President after consultation with representatives of industry, business, and agriculture to approve voluntary agreements providing (1) for allocation of transportation facilities and equipment and (2) for priority allocation and inventory control of scarce commodities which basically affect the cost of living or industrial production. Price fixing is specifically prohibited in the agreements. Agreements must terminate on or before March 1, 1949.

In Public Law 759, the Selective Service Act, section 18, the President is authorized "after consultation with and receiving advice from the National Security Resources Board that it is in the interest of the national security for the government to obtain prompt delivery of any articles or materials . . . exclusively for the use of the armed forces of the United States, or for the use of the Atomic Energy Commission," to place orders for such articles or materials. Such orders are then to be given precedence by the persons receiving them over all other orders. In the event of noncompliance, the President is authorized to take immediate possession of any plant, mine, or other facility of such person and to operate it through any government agency. This same mandatory provision is made specifically applicable to producers of steel in a special section of the law. Steel producers are also required to supply steel to all individuals, firms, etc., having orders for steel products or steel materials required by the armed forces.³

Adequacy of Available Controls under Present Conditions

Most likely the voluntary and mandatory procedures available under the present statutes will be adequate in view of the evidences of reduced strain in many sectors of the economy, if the current military-security-economic readiness and foreign aid demands are held to approximately the present level or to the lower limits of the 1950 projection. In the absence of renewed general inflationary forces and

the importance of these products on the strategic stock-piling list of the armed forces and the dependence of the United States upon foreign sources of supply.

³In addition to the industrial controls under the Second Decontrol Act and Public Laws 395 and 759, it should be noted that under authority of the Rubber Act of 1948, effective until June 30, 1950, the Department of Commerce (1) establishes minimum synthetic rubber specifications for an important list of rubber products; (2) allocates synthetic rubber produced in government plants; and (3) imposes certain restrictions on the importation of rubber products. Also, in accordance with a provision of the Foreign Aid Appropriation Act, the Department of Commerce allocates 10 per cent of the anhydrous ammonia produced in plants operated by or for the Department of the Army to certain domestic producers of ammonium sulphate in accordance with preferences established in the Act.

in the presence of adequate fiscal and monetary programs, the priority, allocation, and inventory control authority under Public Laws 395 and 759 should continue to have primarily stand-by significance, except perhaps in a small number of instances. To this point, the mandatory provisions of the Selective Service Act have not been invoked. As yet, also, the voluntary agreements procedure of Public Law 395 has had its chief trial run in the steel industry which has preferred this method to the exercise of the President's mandatory powers, but which also, prior to the election, had indicated a strong desire to drop the whole business. More recently, however, the industry has again given support to this procedure and has agreed even to expand the number of allocation programs. The members of the nonferrous industry thus far have preferred to work out arrangements individually rather than through the industry-wide voluntary agreements procedure, especially in assisting in filling the stock pile. An increase in pressure from preferred programs would no doubt produce a shift in sentiment. Some members of the industry prefer that the government make the decisions through mandatory programs once the burden of individual allocations becomes heavy. More important, however, from a public point of view is the lack of guarantee of equity or of serving the public interest under such individual arrangements. If long continued under conditions of serious shortage, they tend to produce a sizable gray market and eventually an explosive reaction. One of their most serious aspects, socially, is the likelihood that small firms will be at a serious disadvantage and that the entry of new firms will be impeded.

Adequacy of Controls Under Expanding Preparedness Programs

Will the existing combined controls be adequate if the preferred military and security demands become considerably heavier than at present within the range of the possibilities discussed in the earlier section? At what point would individual and industry-wide voluntary arrangements give way to the mandatory procedures of the government? Would it be desirable to implement the allocation procedures with conservation devices, inventory controls, and limitation orders? Should the government exert pressure to enlarge productive capacities in industries in a strategic position from the standpoint of security? When must selective controls give ground to a comprehensive scheme of industrial controls? At what point must governmental price and wage controls be introduced?

No one, of course, under the present and potential economic circumstances could give definitive answers to the preceding questions. It is possible, however, to analyze the problem in terms of alternative situations and policies. To begin with, let us assume that there is only

a moderate expansion of demands upon the durable goods sectors to about the midpoint of the 1950 projection; i.e., a total of about 8 to 9 billion dollars. If present industrial portents prove true, most of this increase may be absorbed eventually out of idle resources released elsewhere. If not, the relative reliance upon direct controls will be influenced by the wisdom and adequacy of the indirect influences emanating from fiscal and monetary measures. If inflationary pressures remain strong, then it will be highly important that any expansion of governmental expenditures be more than matched by increased revenues in order to balance the budget and develop at least a modest surplus. Under the conditions assumed, revenues would have to expand at a rate somewhat above that of expenditures in order to create a surplus and restrict consumption to the required amount. If civilian "fat" must be removed it would be preferable to take it out of personal consumption unless it is possible to reduce and direct investment in a highly selective manner. Ideally, at this point it would be desirable to combine the influences emanating from income and excise taxation with a flexible and relatively voluntary method of directing the pattern of private and state and local public investment in terms of the national interest.⁴ It would seem sound policy at this stage to set up a strong national committee including representatives of the leading financial fields, industry, and government to survey the needs and recommend a program of directed investment. Such a committee could be provided with physical and clerical facilities by an appropriate governmental agency. In view of the uncertainties as to the outlook, such a committee should be in a position to reverse and adjust its recommendations in accordance with the needs. This voluntary advisory procedure would provide experience for something more formal and mandatory, if required. National security requires that our productive capacity, especially in certain critical areas, be maintained and enlarged. If necessary, selected public and private capital expenditures could be delayed to facilitate the prosecution of the preferred programs.

Present indications suggest that the postwar boom may have passed its crest. We must be careful, however, not to accept this conclusion too readily. Fiscal and monetary programs, as well as the direction of investment therefore, should be as flexible and reversible as possible in case a recessive drift is established. National economic policy should aim to utilize idle human and nonhuman productive capacities released by a downward movement, to fulfill the military-security needs or other domestic needs that would raise the standard of living, as advances in health and in education or world-wide rehabilitation.

⁴ Mr. Eugene Meyer has suggested that such a program begin with a control over capital issues.

There can be no true lack of unfulfilled and sound economic and social programs to absorb our idle and latent energies. It may indeed be a fortunate conjuncture of circumstances that softness is developing in parts of our economy while the durable goods industries are still basically strong. If these conditions continue, it should be possible to strengthen our security position by transferring some resources to strategic industries without detriment to the economy as a whole.

Even under the best of situations so far as fiscal and monetary measures are concerned, specific controls should be employed, or at least available, to facilitate and give direction to the allocation and transfer of resources; fiscal and monetary measures are blunt tools for this purpose, since the effects are uncertain, unselective,⁵ delayed, and unduly inflexible. If military-security expenditures increase, say, to the mid-point of the 1950 projection and are not offset by declines elsewhere, it would be desirable to parallel the possibilities under the voluntary agreements procedures in Public Law 395 with stand-by mandatory authority for allocations as in the Selective Service Act. Such stand-by authority should be as broad as potential needs; at present it is limited to orders for the armed forces and the Atomic Energy Commission.

The effectiveness of voluntary devices, individual and industry-wide, varies with the attitudes and circumstances of particular industries, especially with the extent of the inability to fulfill all demands at the going price level. In judging these programs it is important to realize that the percentage allocated does not represent the net impact of the program upon industry because some of this amount would have been supplied anyway. Thus in steel to this point, it is estimated, on the basis of the programs currently approved, that the net diversionary impact has been less than $2\frac{1}{2}$ per cent.⁶ The net impact, of course, varies with steel products; currently it is highest for plates, where it is slightly over 10 per cent in relation to approximately one-third under allocation. It is unlikely that voluntary industry-wide agreements normally can be pushed beyond a net impact of 10 to 15 per cent of the total supply without risking breakdown. On this basis, however, there is still possibility of adding significantly to the steel programs without being forced off the voluntary basis. Unfortunately

⁵ There would be no guarantee that the right industries from a security standpoint would gain access to funds and materials.

⁶ The following programs are now in effect or have been approved by the Steel Products Advisory Committee: freight cars, Atomic Energy Commission, armed forces, tank and oil field production equipment, barges, National Advisory Committee for Aeronautics, oil tankers, merchant vessels, anthracite coal mining, manganese ore-carrying cars, mining machinery, gas pipeline for Oak Ridge, warm air heated steel houses, and pig iron for products for residential housing.

for the voluntary industry-wide schemes, their presence acts as an inducement for the industrial consumers to organize and present their claims, as is occurring in steel. Sizable net diversions, percentage-wise, should and normally can be made only under governmental authority because individual firms and industries do not wish to carry such responsibility and a basic redistribution of resources should be made only in terms of national objectives and with uniform application.

Regardless of the level of the military and security programs, it would be sound policy to use all possible measures to conserve supplies and reduce waste both in the civilian and military segments of the economy, especially in fields in which there are significant shortages. Director James E. Webb, of the Bureau of the Budget, pointed out in an address before the First Joint Orientation Conference, National Military Establishment, Office of the Secretary of Defense, on November 10, 1948, that a saving of 5 per cent in the present military budget would represent "a sum sufficient to conduct all the activities and programs of 42 out of the total of 61 departments and agencies in the executive branch of the Government," including "the entire Departments of Justice, Labor and Commerce, the War Assets Administration, the TVA and the Selective Service System." Here, indeed, is incentive enough to push standardization, the elimination of duplication, and all practical devices for economizing the use of men and of materials by the military establishment. Large opportunities exist also in the civilian sectors of the economy if the occasion requires.

The government should attempt to stimulate production in a positive manner at home and abroad in fields of critical shortage from a security standpoint through special financial arrangements, contracts for future delivery with provisions for guaranteed prices or other arrangements. Insofar as the shortage is derived from lack of capital equipment, it may be desirable to allow more rapid annual amortization in order to stimulate expansion and to use the mandatory allocation authority (as proposed above) to provide access to materials in industries of strategic importance from a security standpoint. If the additional insurance capacity is not forthcoming under such inducements, it would be sound from the point of view of national security to subsidize construction through more direct means as during the war period, even at the expense of output, temporarily, in some sectors. National security requires that excess capacity be appraised, not only in terms of civilian demands during the fluctuations of business, but in relation to wartime needs, including possible losses from sporadic bombing. On this basis it would appear to be eminently sound to explore all feasible methods of expanding the basic capacity of certain industries, espe-

cially steel and power, together with supplies of basic raw materials and fuels serving these industries, particularly pig iron and coking coal.

The limits of the required controls, short of a comprehensive scheme including price and wage stabilization, will be determined very largely by the effectiveness of allocation procedures within the basic metallic industries, including their raw materials, and the availability of manpower. It would appear to be sound policy to limit additional military and security expenditures to the control possibilities within these sectors unless the emergency is too great. A selective endeavor in the steel and nonferrous industries should be successful within a moderate range of expansion, if monetary and fiscal policies and programs succeeded in checking general inflationary pressures and if the remainder of the economy did not again revert to a condition of marked shortages in relation to market demands. The accumulation of influences from the durable goods sectors of the economy could create an economic position sufficiently untenable as to lead to a loud outcry for the imposition of comprehensive economic controls if serious general inflationary pressures regain momentum.⁷ The likelihood of such an accumulative influence should not be judged merely in terms of expenditures as a whole but in relation to the specific areas of impact. Thus in the 1949 budget it is estimated that slightly over 50 per cent of the military dollar is required for the pay and maintenance of civilian and military personnel and only about one-third represents the procurement of materials other than food and clothing. Obviously, in general, the impact of military expenditures in themselves presently is critical only in a marginal sense. This impact, however, can be decisive in the face of serious shortages. The projections for 1950 disclose, too, that the possible increases in foreign relief and reconstruction, public works, and gross private domestic investment would strike the same sectors of the economy.⁸

Our manpower position has been tight and may be expected to continue so unless workers are released by industries with full pipelines or by a general business recession. The normal annual increment added to our labor force is about 600,000; fortunately, however, it may run as high as one million in 1949 because of the return of veterans now in school to the labor force and the addition of displaced persons, regardless of the level of defense spending. The normal increase in the labor force should, of course, largely be absorbed by the expansion

⁷ A Gallup poll, released December 21, 1948, showed that 45 per cent of the persons interviewed favored restoring price controls and rationing now; only 42 per cent opposed.

⁸ In Great Britain, wartime industrial controls were centered about steel. In this country, copper and aluminum were of almost coequal importance because of the large aircraft program.

of normal demands. Competition for labor, however, will be sharpened to some extent by the concentration of military demands upon males and of industrial programs upon certain classes of skilled workers. Such competition obviously could accelerate the wage-price inflationary spiral. It appears, however, that manpower limitations can be resolved within a zone of moderate expansion without special controls, especially by inducing a larger participation in the labor force on the part of females and by distributing defense contracts in accordance with the locational availability of labor supply. In the meantime, the United States Employment Service should be maintained in a strong position and the adequacy of present training programs for skilled workers should be studied. The selective service program should not be allowed to reduce the supplies of trained professional and scientific personnel or to inhibit in general the training of the nation's greatest asset—top level brains and skills.⁹

The Return of Comprehensive Economic Controls

If the combined military-security demands push towards or beyond the upper limits of the 1950 projection without the compensatory release of resources elsewhere, then we must face the issue of the return of more drastic and comprehensive controls, including direct limitation orders and price and wage controls.

The need for and timing of an evolving scheme of controls would depend to some extent upon monetary and fiscal programs but not entirely so. Our experience during 1940 and 1941 is useful in appraising the needs. Export controls over critical materials came first, beginning in July, 1940. Such controls are now in effect and should be continued. Next, priorities were required in the machine tool field, followed by the fixation of price ceilings in February, 1941. In February and early March, 1941, a number of critical materials were placed under mandatory priority controls; on March 12, 1941, the first blanket priority order was issued. Beginning with March, 1941, ceiling prices were quickly set for aluminum, zinc and iron and steel scrap and secondary materials. On April 17 price ceilings were set for iron and steel products. On May 1 basic metals were put under an inventory control system. From this point on the range of controls expanded steadily in the metals industries and gradually moved out into other areas, including the 26 per cent cutback of passenger-car production on August 21 and the issuance of the first limitation order to restrict the manufacture of trucks on August 30.

It is well to recall that there was still a large amount of slack in the

⁹ If draft calls are reduced January 1, 1949, as announced on November 30, 1948, by 223,000, this issue may not be so serious.

economy in 1941. Under present conditions we should have plans readied for the use of mandatory priorities and allocations and inventory controls in the key metallic industries and for limitation orders if military-security demands cannot be met without an offsetting reduction in output. Mandatory price and allocation controls would be required first at the raw material and scrap levels. If they were in effect now they would ease the heavy diversionary strains and remove the special arrangements that are employed at this level, such as trades between scrap dealers and steel producers and steel users and the earmarking of scrap. At the raw material and scrap levels, price and allocation controls must run together. If materials prices are stabilized and the flow of materials is regularized, then allocations may be handled at the finished level for a considerable period without price controls. In judging the limits of military-security needs we need to be in a position to define the critical point at which mandatory raw material allocations and price controls must be introduced as well as the zone in which price controls must be imposed upon finished goods.

It would be poor insurance, indeed, to have pushed this far without having available and ready for application a broad scheme of economic controls covering the entire investment program and prices, wages, and farm price sector. It would be especially hazardous to have provided merely stand-by price control authority without plans for and the possibility of adequate implementation. We could very easily find ourselves in the same situation as during 1941 when we proceeded piecemeal rather than on the basis of a comprehensive and co-ordinated plan. With inflationary pressures high as they are now and with the economy operating at peak capacity, it would be impossible to contain the pressures and achieve production objectives under a step-by-step piecemeal program if the military-security demands required a fundamental readjustment in the economy, including a sizable cutback in civilian consumption.

Final Observation

Unless the emergency requires that we be practically on a war footing, it would be poor planning to push military-security expenditures beyond the point where fiscal and monetary measures and selective export and import controls and allocation procedures within the metallic industries meet the needs. It should be possible, if necessary, to expand production for preparedness purposes a moderate amount, and to hold this level of output over a period of years, if necessary, without placing our economy into the strait jacket of the garrison state. It will not, of course, be easy to hold such a position politically

in the face of conflicting demands. Americans, however, will not readily accept the compulsions of the garrison state unless they are convinced that they are necessary. The diversion of resources, the lowering of living standards, the curtailment of welfare programs, and the weight of burdensome controls might be the worst form of preparedness, especially if the emergency continued into the indefinite future. On the other hand, world conditions permitting, a reduction in military-security expenditures, or perhaps even the maintenance of the present level, would allow us to look forward hopefully to dropping our vestigial nonfiscal wartime controls, except perhaps in the export field. Our lot in the immediate future appears to fall between this fortunate outcome and the compulsions of the garrison state. Never in peacetime have we faced this problem of controlled balance in the economy involving broad decisions as to the size of the civilian expenditures in relation to those of the military establishment, the rate of capital formation and the direction of investments, and the relative share of government in the total national product. It will require consummate wisdom and skill in national economic and foreign policy and in administration to to maintain reasonable balance under these conditions.

DISCUSSION

BEN W. LEWIS: I find much to agree with and relatively little to become excited about in the two principal papers. I am concerned, however, about the character of the conditions and forces out of which the papers have grown. I have a vivid feeling that I have traveled this circular path before—this is where I came in.

For the second time in this decade we are preparing in peacetime for war—mobilizing our economists, our statisticians, our computing machines. It recalls the blazing summer days of 1940 in beleaguered Washington, with its shirt-sleeve conferences which were without beginning and without end, the roar of statistics being wheeled into line to bolster threatened flanks, the resounding booms from exploding memoranda dumps, and the shrieking clash of contending organization charts.

For many of us, our economy has been continuously in a state of cyclical or military emergency throughout most of our lives as practicing economists, and it rather prompts one to ask how much more "practice" we need and how much more the economy will stand. Can we continue indefinitely to be amateurs in the business of running an economy? How much longer can we continue to act as though situations which are chronic and which reflect basic qualities of our economic and political life are exceptional and to be handled casually during convenient leaves of absence and summer vacations? Can we continue to learn our lessons, and then relearn them every five years?

Last year at this time, in discussing antitrust policy, I suggested an interpretation and made a prediction with reference to the character of our economic system and its future. I am tempted here to suggest that the whole force of successive preparedness emergencies is to confirm my belief that in the years ahead the government will play a much more prominent and positive economic role and that we would be well advised to accept this as a point of departure and to bend our efforts to the task of molding government and its activity as we think it should be molded rather than barking futilely at its presence. I do not enjoy controlling or being controlled, directly or indirectly, but it is difficult for me to see how, in an economy dominated by large-scale industrial units and poised precariously on the brink of war, controls are to be avoided. And if this is true, I am greatly concerned that the controls shall be equitable and effective and responsible (in the sense that we all shall have a voice in their design and imposition).

I do not like to be compelled to secure a coupon before I can buy a tire. But I do want a tire, and if tires are scarce because of a collective decision that an unusual amount of rubber is needed for our armed forces I do not find it materially less disagreeable to make my request on bended knee to the Jehovah Tire Company than to a government tire board. Nor do I feel that the system which provides me or fails to provide me with a tire is freer or less oppressive if I am allowed to bid competitively in the market against my wealthier neighbor whose wealth is, so to speak, tied behind his back by the fiscal policy of the government. This is not to argue for the in-

discriminate imposition of direct government controls; it is simply not to be frightened by their mention. And it is particularly not to be frightened by the fact that such controls are open and relatively precise rather than concealed and blunt and unpredictable. I do not like a police state, but I am not more frightened by the thought of government police than company police. It is no accident and it reflects no perversion that in our increasingly complex society legislative activity has been increasingly supplemented by the activity of administrative agencies in the past half-century.

While I am on this tack, let me suggest finally that as we head our economy further into a continuing state of preparedness for war, even "controls" may prove quite inadequate in particular situations. As an intellectual proposition it bothers me and as a practical matter it concerns me greatly for the people of the United States through their government to ask business management, in the social interest, to make investment decisions which their common sense as businessmen tells them not to make—and to ask it in the name of preserving our system of profit-guided free enterprise. Nor is it appreciably more palatable for the government to seek to induce private management, through subsidies and special tax treatment, to make such decisions. If this is a job for private enterprise, let it be done by private enterprise; if it is too risky for private enterprise, let it be done by positive government enterprise. I see little point in paying private entrepreneurship to go through the motions of taking risks which are in fact borne by the government.

Through controls we can prevent much that is undesirable, but government-inspired conferences and government controls, as distinct from government enterprise, are inherently defective as instruments for positive action. This may be worth thinking about if, as appears likely, our normal lives are henceforth to be lived under conditions of emergency.

FRITZ MACHLUP: A few speakers in other sessions of these meetings have expressed some uneasiness, if not fear, concerning an imminent recession or depression. Some even warned us against adopting anti-inflationary measures of a monetary and fiscal sort because, in their opinion, the inflationary pressures are about to give way to strong deflationary forces.

The two speakers in this session, eminent economists engaged in government work on programs involving large expenditures for national security, do not seem to fear deflation in the near future, however. Indeed, both would probably be relieved if they could count on the dominance of deflationary forces in the private sector of the economy. Any reduction in private demand, any release of labor and material resources from civilian domestic use, would greatly facilitate the execution of the tasks necessary for national security and might save the economy from the dire consequences of a hard struggle for scarce resources. In other words, he who knows how much may be needed for national security, who appreciates the potential magnitude of the military and foreign programs of the government, does not fear, but can only hope for, a depression in markets for civilian goods. But the

chances that this depression will come quickly enough and be strong enough are not too good. Thus we must face a fierce scramble for scarce resources and must think of the least harmful ways of handling it.

Professors Smithies and Grether agree that monetary and fiscal controls are needed to prevent harmful inflation. They agree that increased government expenditures in the next few years should be met by increased tax revenues; indeed Dr. Grether calls for a surplus of tax collections over government expenditures. In addition to calling for higher taxes on consumption, Dr. Smithies is not afraid to mention higher interest rates as a means of reducing private expenditures. The difference between the two speakers is on the need for supplementing the fiscal and monetary controls by direct controls over the uses and prices of resources and products.

Dr. Smithies recommends that we try to do without OPA and WPB controls and employ the price mechanism for the job of accomplishing the shift of resources from civilian uses to national security uses. Dr. Grether, however, seems to think that this will be impossible if the defense programs are large and he presents his list of direct controls: (1) control over private investment; (2) controls over the use of certain materials through priorities and direct allocation and inventory controls; (3) controls of prices and allocation of certain materials; and, finally, he wants us to have "ready for application a broad scheme of economic controls covering the entire investment program and prices, wages, and the farm price sector." But, since he is a jolly good fellow who does not want to frighten us too much, he concludes his observations by assuring us that it may not be necessary to "place our economy into the strait jacket of the garrison state."

Now I do not really know where we stand, because Dr. Smithies wants to avoid the direct controls "if possible," and Dr. Grether wants to use them only "if necessary." What are their criteria for this "possibility" and this "necessity"? Is it merely intuition and intestinal fortitude which determine the decision or are there any objective indicators which, on the basis of explicit theories, will tell us when the critical point has arrived?

I have the impression that Dr. Smithies, if he had a few more weeks to think, might give us more clues for answering these questions than he has done in his paper. He set forth the theoretical possibility of accomplishing the mobilization through income transfer and price effects without direct allocation and price controls, and he states what the so-called "practical" objections to the realization of the possibility are. He might be able, I believe, to give somewhat more precise evaluations to the objections and obstacles and might then approach, on the basis of given political and social goals, a theory for determining the point when reliance on the market mechanism becomes impossible or intolerable.

The primitive notion that a shift of income will automatically shift resources without the need for price movements is of course not tenable. But this argument cannot yet justify the imposition of direct controls, although it may be what is in the back of the minds of many advocates of direct controls. If you take by taxation an additional billion dollars from the people

and spend it for defense purposes, the demand for movies and whisky and tobacco may fall. But only very little steel and copper and aluminum would be released from civilian use, while a very large part of that billion spent by the military will go for these materials. If income transfer effects alone—without the aid of price effects—should perform the shift of the specifically needed resources, you might have to take from the people ten billion dollars in taxes in order to free enough metals for a defense expenditure of one billion dollars.

This argument is as primitive as the notion which it refutes. Of course, income transfers alone could not do the trick in less than a hundred years or so. The prices of the materials demanded for defense purposes will have to rise if the reallocation is to be accomplished without a WPB.

This leads to the second argument of the advocates of direct control. If the scarce materials constitute only small portions of the goods demanded by civilian buyers, the elasticity of demand for these materials will be very small. (Marshall's third rule of derived demand.) Hence the price may have to rise very high before the civilians will let go of enough material to fill the need of the military. Hence the call for a WPB and an OPA.

To conclude that price and allocation controls are needed whenever prices would rise without these controls is a *non sequitur* unless we accept the dogma that price increases must be avoided at all cost. I do not see why we should accept such a dogma. Whether or not we should submit to price increases depends on the social cost of running the economy in a different way. If there were only one single civilian use for a particular material, things would be simple. We could easily and cheaply do by government fiat what the market mechanism would do by way of a price boost. But if there are hundreds or thousands of different civilian uses, the story is different. To reallocate the material without price increase would immediately force us to introduce a costly system of evaluating by arbitrary standards the importance of every single use of the material and to allocate it among the competing uses and among the regions and among the individual producers. There is a middle way by which the bureaucratic allocation can be avoided. We can, as Dr. Smithies proposes, confine the role of the government to the issuance of set-aside orders for certain defense purposes and let the rest of the economy compete for the rest of the supply. But I would not allow preferential pricing in favor of the set-aside beneficiaries. They would have to pay the price that evolves from the competition for the supply; otherwise we would have to cope with too many people trying to get into the favored group. The set-aside should merely serve as assurance of preferred delivery.

There is also the difficulty of the increased profits, which are so unpopular with most people (including many of those who make them). One way of dealing with allegedly excessive profits is the practice of several industries of selling at arbitrarily low prices and letting the dealers on white, gray, and black markets take the profits. This is an unsatisfactory solution. For several years now it has been proposed to channel these profits into government coffers by means of special excise taxes. Dr. Smithies repeats the pro-

posal, which, I believe, should be given full support, professionally and politically. Industries invite these excise taxes when they voluntarily refrain from charging the prices at which excess demand would disappear. Whenever an industry discards the price mechanism of distributing its products and resorts to private allocation, the government should impose excise taxes. This would increase government revenues, reduce inflationary pressures, eliminate gray markets, mop up profits which have no economic function, avoid discrimination in the distribution of the supply, and reinstitute price competition for scarce products. (Please note that I said excise taxes, not excess profits taxes.)

The price increases in defense-necessary materials and products need not be called inflationary, because the heavy taxes, chiefly income taxes, would create deficient demands in other parts of the economy. Any net increase in price levels would be due not to excessive aggregate spending but to differences in the elasticities of supply in the industries where demand is reduced and in those where demand is increased. You may call this a merely terminological question, but I believe that it may help in the understanding of the relationship between mere income transfer effects and price effects upon the allocation mechanism of the system.

By reasoning along these or similar lines I should now like to see Dr. Smithies or others develop the theory which we need to show when the price effects would be more harmful than the effects of WPB and OPA controls. My feeling is that any critical point that we may find existing is much farther away than Dr. Grether and other advocates of direct controls are inclined to assume.

The advocates of selective direct controls should bear in mind three important differences between 1941-42 and 1949: (1) large unemployment then, full employment now; (2) business without control experience then, but wise now; (3) war then, peace now.

So much about the question of controls. It would be a rather narrow view if we discussed the economics of preparedness for war only in terms of the types of control to be imposed. There are other, perhaps larger, problems to be considered, although they may seem to be less pressing.

Up to now I have assumed that the amounts of expenditures for military and foreign programs must be taken as unalterably given. But in fact the amounts are flexible and should be determined in terms of foregone opportunities. If the only alternatives were more current consumption versus better preparedness for a war emergency, the choice would be simple. Few of us would choose opulence at the expense of national security. But the real alternatives are different. The choice before us is between building up the productive capacity of the nation or building immediately a stock of military equipment whose obsolescence is enormous. Every additional billion now spent for military purposes will, to be sure, increase our preparedness for a war in 1950 or 1951, but will reduce our preparedness for a war in 1953, 1954, or later. Those who have to make this decision have an enormous responsibility.

I wish to conclude my comments on a different note. When I was a small

boy I often walked past a large building on the Ringstrasse in Vienna, and tried to decipher the inscription on the facade. It read: *Si Vis Pacem Para Bellum*. I learned that it was the War Department and that the inscription meant: "If you want peace, prepare for war." You will forgive a small boy when he failed to be convinced by the explanations the adults offered him for this maxim. When I was older, I was told, at school and especially at the university, that a great many measures must be adopted in order to be prepared for the war that should secure the peace. For example, I was told that the nation should pile up a large gold stock, earmarked for war expenditures. I was told that one should have high protective tariffs, in order to become independent of foreign production. I was told that one should have large subsidies for "strategic" industries. I was told that one should have import prohibitions for certain products, export prohibitions for certain materials, foreign trade controls for many others. My education was not yet complete. Today I am told that we should control and reduce private investment. Today I am told we should introduce price and allocation controls. All this we should do in peacetime, to be better prepared for a war. I cannot help it. I still doubt.

PRESENT ISSUES OF THE LATIN-AMERICAN ECONOMY

SOME ASPECTS OF LATIN AMERICA'S TRADE AND BALANCE OF PAYMENTS

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Each of the Latin-American republics has important unique characteristics in its recent balance of payments. These special characteristics, while presenting a fascinating array of problems for the balance-of-payments technician, lend warning that aggregate figures such as are used for convenience in this paper must be interpreted with great caution.

I. Summary of 1947-48 Balance of Payments

The most striking feature of Latin America's 1947 balance of payments was a current account deficit with the United States of about 2.0 billion dollars (1.6 billions representing the f.o.b. trade deficit);¹ in addition Latin-American private dollar balances in the United States increased by about 150 millions. The dollars needed for these transactions were obtained by receipts of roughly 600 million dollars from transactions with other areas (chiefly Europe and the sterling area), by receipts of over 700 millions in U. S. short-term and long-term capital, and by the sale of approximately 900 millions of gold. A few Latin-American countries—notably Cuba in 1947 and Venezuela in 1948—have been able to add to their official gold and dollar assets; these additions amounted to about 170 millions in 1947 and over 100 million in the first eight months of 1948.² The largest loss of gold in 1947 was about 650 million dollars, in the case of Argentina, and that country continued to have the largest loss in 1948.

In 1948 the Latin-American current account deficit with the U. S. may be reduced from 2 billion dollars to roughly 1 billion, financed largely by funds transferred from Europe and other areas; receipt of some U. S. long-term capital and a further net reduction in Latin-American gold reserves by perhaps 150-200 million also contributed to financing the 1948 current account deficit with this country.

¹ Robert L. Sammons, "International Transactions by Major Foreign Areas," *Survey of Current Business*, November, 1948, pp. 20-24.

² International Monetary Fund, *Annual Report*, April 20, 1948 (Washington, 1948), p. 7, and *International Financial Statistics*, November, 1948, p. 17.

II. General Background of Trade

The total export trade of Latin-American countries has been at record levels in the last two years (see Table I). Aggregate 1947 exports, for example, were more than three times the 1939 value, and in 1948 the trend has continued upward. Practically all countries in the area have shared this experience. The exports have been generally at very high prices, which accounted for the increase of value in most cases. It appears, therefore, that Latin America's exchange losses and

TABLE I
AGGREGATE TRADE OF LATIN AMERICA, 1936-47
(Millions of Dollars)

YEAR	EXPORTS (f.o.b.)	IMPORTS (c.i.f.)*	TRADE BALANCE
1936	1,888	1,261	+ 627
1937	2,324	1,651	+ 673
1938	1,688	1,484	+ 204
1939	1,717	1,360	+ 357
1940	1,591	1,394	+ 197
1941	1,889	1,487	+ 402
1942	2,004	1,395	+ 609
1943	2,580	1,524	+1,056
1944	2,969	1,942	+1,027
1945	3,260	2,286	+ 974
1946	4,552	3,412	+1,140
1947†	5,855	5,724	+ 131

* Import statistics in this table are as presented by the various countries, in most cases on a c.i.f. basis. For Venezuela, Cuba, Honduras, Nicaragua, Panama, and Ecuador, however, the import data are f.o.b. To put data for these countries on a c.i.f. basis, upward adjustments of 80 million dollars in 1945 and about 140 million in 1946 and 1947 may be made. Cf. *International Financial Statistics* (November, 1948).

† Partly estimated.

Sources: U. S. Department of Commerce except for data on Mexico, which are from annual reports of the Banco de Mexico and which exclude movements of gold.

balance-of-payments difficulties cannot be attributed to an insufficiency of markets or to a dearth of exchange receipts.

Imports of Latin America have risen in even more striking fashion than have exports. From less than 1.5 billion dollars a year in 1938-42, Latin America's imports began to rise rapidly after 1943, although even in 1946 they were still substantially less than exports. In 1947, however, the over-all value of imports rose by two-thirds to about 5.7 billion dollars, and in 1948 the aggregate value will probably still exceed 5 billion. Not only in value but also in quantity, and even on the basis of quantity per capita, the 1947 aggregate imports were considerably higher than imports during the twenties or thirties.⁸ An

⁸ Imports into Latin America in 1928 and 1938, for example, totaled 2.8 billion and 2.4 billion dollars, respectively, compared to 4.5 billions in 1947, all in terms of 1923-25 prices (deflated by the index of unit values of U. S. exports).

examination of individual countries shows that virtually all in the area have shared in the high value of imports, including even some countries where exchange was tight and imports rationed.

Special postwar difficulties have arisen because of a large Latin-American surplus with Europe, which was needed in 1946-47 to meet Latin America's current account deficit with the United States. This triangular trade was particularly important for Argentina and some

TABLE II
LATIN AMERICA'S TRADE WITH EUROPE, 1936 TO 1949
(Millions of Dollars)

YEAR	LATIN AMERICA'S EXPORTS TO EUROPE (f.o.b.)	LATIN AMERICA'S IMPORTS FROM EUROPE (c.i.f.)*	TRADE BALANCE
1936	889	707	+182
1937	1,169	784	+285
1938	833	715	+118
1939	807	580	+227
1940	521	331	+190
1941	315	195	+120
1942	404	189	+215
1943	486	181	+305
1944	600	136	+464
1945	683	225	+458
1946	1,356	503	+853
1947	1,836	894	+942
1948-49†	2,007	1,200	+807

* See Table I, footnote*.

† Program for 1948-49 fiscal year, with f.o.b. programmed shipments from Europe to Latin America increased from 1,064 million dollars in order to place on more comparable basis with earlier years.

Sources: 1936-46, U. S. Department of Commerce; 1947, Board of Governors of the Federal Reserve System; 1948-49 fiscal year estimate, Organization for European Economic Cooperation, *Report to ECA on First Annual Programme, 1st July 1948-30th June, 1949* (Economic Co-operation Administration, Washington, October 25, 1948), annex tables.

other South American countries. In 1947 the Latin-American trade surplus with Europe was roughly four times as large as in 1938, because exports from Latin America to Europe had by 1947 nearly doubled in value, whereas imports into Latin America from Europe increased but little. These changes reflect, of course, the destruction and dislocation of Europe's production, the resultant decline in European exports, and the high demand for imports into Europe. The Latin-American trade surplus with Europe in 1947 was offset in part by net invisible items, and a considerable part of it was paid for out of Latin-American credits, accumulation of blocked currencies, and capital repatriations. There remained, however, a large amount to be financed by transfers of dollars.

When the European dollar crisis became acute this settlement in

dollars became more difficult. Meanwhile, the Latin-American countries most directly affected also began experiencing dollar crises, as deliveries of goods from the United States increased. Furthermore, inflationary conditions, especially in Argentina, made it more difficult to deal with the trade surplus with Europe by credits and capital repatriations. As a result of all these circumstances, Latin America and Europe are reaching a closer balance of exports and imports, which is taking place chiefly through increased shipments from Europe to

TABLE III
LATIN AMERICA'S TRADE WITH THE UNITED STATES, 1936-48*
(Millions of Dollars)

YEAR	LATIN AMERICA'S EXPORTS TO UNITED STATES (f.o.b.)	LATIN AMERICA'S IMPORTS FROM UNITED STATES (f.o.b.)	EXCESS OF LATIN AMERICA'S EXPORTS (+) OR IMPORTS (-)
1936	543	396	+ 147
1937	714	588	+ 126
1938	506	486	+ 20
1939	560	554	+ 6
1940	670	682	- 12
1941	1,076	902	+ 174
1942	1,166	711	+ 455
1943	1,445	830	+ 615
1944	1,726	1,112	+ 614
1945	1,772	1,284	+ 488
1946	1,898	2,150	- 252
1947	2,284	3,858	-1,574
1948†	2,600	3,160	- 560

* Based on U. S. trade statistics, inclusive of silver and as adjusted for balance-of-payments purposes.

† Annual rate based on ten-month trade totals, with adjustments for the first half of the year and partial adjustment for the second half of the year.

Latin America. Except for a number of "dollar" commodities, such as petroleum, copper, tin, and sugar, a substantial balancing of accounts between Europe and the major countries of South America is taking place, with and without formal clearing or payments agreements.⁴ It may be noted, also, that ECA funds are of considerable assistance in paying for these "dollar" commodities.

Trade of the Latin-American countries with the United States before the war was in fairly close balance in some years and showed an appreciable export excess in others, as shown by adjusted United States f.o.b. merchandise trade figures (see Table III). During the war,

⁴ Cf. *South American Journal*, June 5, 1948, p. 277: "The various agreements entered into between Great Britain and several Latin American countries during the last year or so may serve as suitable illustrations of the tendencies at present prevalent. They all aim at a theoretical balance of trade between the United Kingdom and respective co-signatory states."

however, imports into Latin America from the United States were held to low levels, while exports to this country rose rapidly. The resulting large surplus of Latin-American exports not only financed the net invisible payments to this country but also provided for substantial acquisitions of gold and dollars.

After the war came the "new era" in Latin America's imports, especially regarding its trade with the United States. As goods became more readily available, the southward movement of trade increased markedly, both in volume and value. Among these imports were many luxury and semiluxury items, but the largest value increases were in machinery and iron and steel products.⁵ By 1947 Latin America apparently was obtaining more "development" goods from this country than before the war, and furthermore, Latin America's share in total United States exports of those items was higher.

During 1948, the movement of United States goods to Latin America declined. For the first ten months of the year the annual rate of these shipments was about 18 per cent below the 1947 total. At the same time Latin-American exports to the United States continued to rise. Consequently the Latin-American import balance with this country may be almost 1 billion dollars lower than in 1947.

In Table IV is shown the global trade of the nine principal Latin-American countries which in 1947 accounted for over 90 per cent of aggregate Latin-American exports and imports. Except for Cuba, the increase of imports from 1946 to 1947 was much greater than the increase of exports, and a similar comparison between other years and 1947 likewise shows that the increase of imports was generally greater than the increase of exports. While 1947 exports ranged from about 2 to 4 times the 1938 values for these nine countries, imports shot forward to as much as 6.2 times the 1938 value in one case and 5.9 times 1938 value in another; in the country with the smallest increase the 1947 imports were 2.5 times the 1938 value. Cuba was able in 1947 to import close to 5 times the 1938 value of imports while maintaining a record export surplus. Venezuela's exports continue to exceed its high imports, but by a smaller margin.⁶

Partial data for 1948 show increased total exports for nearly all countries. Latest twelve-month totals are about 10-15 per cent above the calendar year 1947 for Argentina, Mexico, and Colombia, and

⁵ David L. Grove and Gerald M. Alter, "Latin America's Postwar Inflation and Balance of Payments Problems," *Federal Reserve Bulletin*, November, 1948, p. 1346.

⁶ Venezuela may be experiencing a current account deficit which is more than made up by an inflow of capital, and it might find itself in balance-of-payments difficulties if the petroleum companies were to cease bringing in new funds or reinvesting their earnings within the country.

TABLE IV
TRADE OF SELECTED LATIN-AMERICAN COUNTRIES, 1938 AND 1944-47
(Millions of Dollars)

	1938	1944	1945	1946	1947
Argentina: Exports	409	681	731	1,183	1,639
Imports	428	258	295	570	1,308
Balance	-19	+423	+436	+613	+331
Brazil: Exports	296	579	661	981	1,146
Imports	295	409	442	671	1,217
Balance	+1	+170	+219	+310	-71
Cuba: Exports	143	433	410	476	747
Imports	106	209	239	300	520
Balance	+37	+224	+171	+176	+227
Venezuela: Exports	178	265	338	515	643*
Imports	97	162	240	294	541*
Balance	+81	+103	+98	+221	+102*
Mexico: Exports	167	212	252	318	406
Imports	111	278	330	543	660
Balance	+56	-66	-78	-225	-254
Chile: Exports	141	198	211	230	280
Imports	103	149	156	197	270
Balance	+38	+49	+55	+33	+10
Colombia: Exports	81	130	141	201	254
Imports	89	100	160	230	363
Balance	-8	+30	-19	-29	-109
Uruguay: Exports	62	98	122	153	162
Imports	62	72	94	147	215
Balance	..	+26	+28	+6	-53
Peru: Exports	77	84	104	151	154
Imports	58	79	85	123	168
Balance	+19	+5	+19	+28	-14

* Estimated.

Sources: U. S. Department of Commerce and (for Mexico) Banco de Mexico, *Annual Report for 1947* (Mexico, D. F., 1948), pp. 50-51, 56.

25 per cent higher for Uruguay. Imports, in contrast, were reduced in the first part of 1948 for several countries, and because of exchange restrictions and depreciations it is believed that aggregate imports during the second half of the year will be curtailed further. The net Latin-American export trade balance with all countries, therefore, should be much higher in 1948 than in 1947, and as 1949 is commenced this trend may continue.

The chief factor in the higher export balance is the sharp cut in Latin America's imports from the United States, offset partly by a rise in Latin America's imports from Europe. At the same time an increase of perhaps 200 million dollars in Latin-American exports to the United States is accompanied by an apparent increase in the value of shipments to other areas. Latin America's aggregate trade balance with the United States may improve by as much as 1 billion in 1948 compared to 1947, while its over-all balances of trade with other areas may not be greatly changed. In 1949 it seems likely that Latin America's bilateral trade both with the United States and with Europe will continue moving toward a balance of imports and exports.

Has Latin America then solved its trade problem, which is the major part of its balance-of-payments problem? Unfortunately, this does not appear to be the case, because the remaining trade deficit with the United States is large and troublesome for a number of Latin-American countries and the statistical improvement conceals stresses and strains created by operation of the direct controls which brought about the improvement.

The root of the difficulty arises from an internal demand for foreign goods large relative to current receipts of dollars and other currencies. In several countries this demand, often caused by fiscal deficits, accelerated development programs, and credit expansion, is increasing rather than decreasing. Drastic direct import controls have cut the trade deficit, but they do not automatically bring into play self-corrective processes which would eventually correct the basic maladjustments and make possible removal of the controls. On the contrary, their influence appears to be in the opposite direction. Import quotas, for example, reduce customs revenues without reducing total consumer demand or limiting the increase of prices, and thereby tend to intensify inflation, making it progressively more difficult to administer the direct controls unless anti-inflationary measures are taken.⁷ Furthermore, they may produce an "aspirin effect"; i.e., by taking care of immediate balance-of-payments headaches, they may divert attention from the basic maladies. Reform in matters such as tax and fiscal policy, central banking policy, and government policies affecting private capital formation may then be postponed, with resulting further deterioration in underlying economic and financial conditions.

⁷ Although an alternative course of action might have been preferable from the long-range viewpoint, in the specific balance-of-payments situations confronting some Latin-American countries in 1947 and 1948, direct controls may have been the only feasible devices to use. One of the objectionable features of direct controls, of course, is that they frequently tend to become protectionist in character and in the long run their effect then is primarily to reduce the total value of foreign trade rather than to alter the trade balance.

III. *Latin America and the European Recovery Program*

The significance of the European Recovery Program for Latin America lies chiefly in the advantages the other American republics can obtain from an economically strong European continent. As the countries in the Organization for European Economic Co-operation (OEEC) restore their capacity to produce and to export and their ability to buy the goods of Latin America, the lasting benefits of the program will become more evident. They will be especially impressive if viewed in contrast with the situation which was developing in 1947, when few useful goods could be obtained from Europe by Latin America, and the dollar financing of Latin-American exports to Europe was jeopardized.

Much of the disappointment in Latin America over the benefits from the ERP has arisen from excessive expectations with regard to "off-shore procurement." There were hopes in some countries for a great increase of exports (especially of grains) to be paid for with ECA dollars which would contribute to re-establishment of the triangular pattern of trade between the United States, Latin America (especially Argentina), and Europe. It turned out, however, that with bountiful Northern Hemisphere harvests no direct procurement of Latin-American grains has yet been needed. In addition, Section 112(d) of the Foreign Assistance Act of 1948 and Section 202 of the Foreign Aid Appropriation Act, 1949, have limited purchases in Latin America. The former prohibits normal offshore procurement of farm products declared surplus in the United States; tobacco, cotton, flaxseed, linseed oil, and other items have been so declared surplus. The latter specifies that no bulk purchases shall be made at prices higher than United States prices and also in effect prevents offshore procurement of wool.

There are prospects that the total procurement authorizations in Latin America in the first year of the ECA will be less than 400 million dollars. In terms of actual shipments, the first year results will be even less impressive. Through October 31, 1948, only 74 million dollars of shipments had been reported, compared to authorizations of 146 million for that period.⁸

In reviewing these data, the ECA direct assistance to Latin America's trade should not be overemphasized, because petroleum and non-ferrous metals, which accounted for about 45 per cent of the authorizations through November 15, would probably have found a ready market for dollars in any case. On the other hand, the Economic

⁸ Authorizations from April 3 through November 15, 1948, totaled 216.5 million dollars. Economic Cooperation Administration, *Fifth Report for the Public Advisory Board* (Washington, November 24, 1948), p. 67.

Recovery Program has eased the general dollar position of Canada and European countries and enabled them to spend more dollars in Latin America than would otherwise have been possible.

TABLE V

COLLECTIONS OVER 90 DAYS SLOW AND TOTAL COLLECTIONS AND CONFIRMED LETTERS OF CREDIT OUTSTANDING OF 12 NEW YORK CITY BANKS ON BRAZIL AND ARGENTINA, JUNE 30, 1947-SEPTEMBER 30, 1948
(Values in Millions)

	June 30, 1947	Dec. 31, 1947	Mar. 31, 1948	June 30, 1948	Sept. 30, 1948
<i>Brazil:</i>					
Collections over 90 days slow	3%	13%	27%	60%	66%
Outstanding collections	\$46.9	\$51.0	\$67.2	\$66.6	\$48.7
Outstanding letters of credit	\$38.0	\$27.6	\$18.0	\$19.2	\$17.0
<i>Argentina:</i>					
Collections over 90 days slow	6%	9%	10%	13%	21%
Outstanding collections	\$ 12.5	\$ 12.3	\$ 13.2	\$16.4	\$13.9
Outstanding letters of credit	\$143.7	\$124.4	\$114.3	\$84.0	\$61.4

Source: Federal Reserve Bank of New York.

IV. *Some Problems in Latin-American Balances of Payments*

A. *"Forced Loans" to and from Latin America.* It is sometimes observed that Latin America helped to finance the war by accumulating some 3 billion dollars of gold and dollar assets as a "forced loan." Recently another kind of "forced loan" has occurred, in the other direction, in the form of blocked balances involuntarily held by United States banks and businessmen. Such balances sometimes result from new exchange regulations in Latin America which may suspend exchange permits previously granted and prevent the transfer of dollars for goods already shipped. Some estimates of these nontransferable local currency sums are as high as 500 million dollars. Reports from U. S. banks for June 1948 show total bank claims of about 250 million against Latin-American countries with exchange control, with increases in such claims of 80 million in 1947 and 25 million in the first half of 1948.⁹ In the case of leading New York banks, however, outstanding credits to Argentina and Brazil have actually decreased during recent months. Apparently United States banks and exporters have curtailed new trade credits and new confirmed letters of credit when delays arose in payments. This is illustrated by data in Table V.

Such "forced loans" therefore apparently have only a temporary effect; they may soon result in a decrease of total outstanding credit, and in any case they only postpone the transfer burden a short time, if the importing country wishes to maintain a good credit standing.

⁹ *Treasury Bulletin*, May, 1947, May, 1948, and November, 1948. The 80 million dollar claim of the U. S. Stabilization Fund on Brazil has been deducted in these computations.

B. *The "Terms of Trade" Problem.* Since the prewar period the prices of Latin America's exports have risen much more than the prices of its imports. This is to be expected during a time of world prosperity for countries which export foodstuffs and raw materials.¹⁰ The increase in export values did not prevent emergence of import trade balances, but it has moderated the exchange difficulties and enabled Latin America to obtain an increased volume of imports even though quantities of exports in general have not risen.

A serious problem is posed for the future, if and when food and raw material prices fall. Such an occurrence would be beneficial to the OEEC participants, but detrimental to Latin America. In view of this danger, Latin-American countries should promptly establish conditions which would create satisfactory equilibria and even surpluses in their international accounts; to be prudent they should use the present period of high prices and good markets as a time to build up reserves rather than to draw them down.

C. *Import and Exchange Controls.* Latin-American countries have resorted to a variety of devices to reduce imports and redress the balance of payments. A favorite measure has been the multiple rate technique used in Argentina, Paraguay, Chile, Peru, Ecuador, and Colombia to increase the cost of luxury or nonessential imports while maintaining a favorable rate for essential imports. In some cases higher rates (in pesos per dollar) for nonessentials provide badly needed fiscal revenues; and in some cases higher rates are linked with encouragement of exports which are hampered at lower "parity" rates. Multiple rates as a device to meet balance-of-payments difficulties have the advantages of ease of administration compared to quotas and rationing, avoidance of windfall profits which license holders often obtain under quota regimes, avoidance of discrimination among foreign suppliers and among domestic consumers, and achievement of the benefits of depreciation when depreciation itself is politically impractical. If exports are not impeded at the official rates, the arguments for multiple import rates as a balance-of-payments corrective become very persuasive.

Multiple rates, however, have a number of undesirable effects. While equivalent to ad valorem tariffs on broad groups of goods, they may be even more uneconomic than customary tariffs because the effective rate burden is apt to be much higher and because sudden arbitrary changes in classification add greatly to the difficulties of carrying on business. Although such systems are often adopted as transitional measures, pending establishment of a unified rate, in practice

¹⁰ Grove and Alter, *op. cit.*, p. 1350.

they tend to create vested interests which clamor for retention of the system or for its equivalent in terms of stiff taxes on imports and sometimes on certain exports. A further difficulty with the device even for temporary balance-of-payments use is that multiple rates may not be as effective as direct exchange and import controls. For example, multiple import rates without quantitative controls may permit dissipation of exchange through speculative excesses of both essential and nonessential imports, and if the height of penalty rates should be initially underestimated, the resultant losses of exchange might be very serious.

As a permanent device—which they almost seem to be in some countries—multiple rates are, as noted, equivalent to tariffs. In a world of international tariff agreements, their introduction and maintenance introduces a number of practical problems. Although sometimes they may be condoned temporarily on balance-of-payments grounds, the existence of a balance-of-payments disequilibrium must be determined, perhaps by the International Monetary Fund, and making a satisfactory determination in some cases would be difficult. Other parties to international trade and tariff agreements might wish to withdraw compensatory concessions if they felt their interests were damaged, even if balance-of-payments justification were established. In addition, as time goes on, the question would arise of whether exceptional measures which nullify concessions can be justified indefinitely, when the justification is in terms of presumably temporary balance-of-payments disequilibria.

D. Bilateral Clearing and Payments Agreements. Clearing and payments agreements in Latin America add no new knowledge to what has previously been learned of these devices. The problem of blocked balances, the involuntary granting of credit by countries whose inflation stems in part from such extensions of credit, the incentive to import and build up a debit balance, the discrimination in favor of imports from clearing partners, the sale of goods under clearings at inflated prices, and the offer of luxury articles by the debtor are all familiar. The problem usually faced by Latin-American countries in the postwar period has been granting large credits and being unable to liquidate the balances by purchase of goods. It would be perfectly possible, however, for this situation to be reversed quickly in some cases, especially if inflation in the Latin-American country is proceeding more rapidly than in the European clearing partner.

Clearing and payments agreements have one almost unique aspect in the Latin-American scene today, in that they represent a conscious effort to increase exchange receipts. Some multiple rate systems have export promotion as one objective, but in general the Latin-American

countries have tried to solve their balance-of-payments problems through reduction of imports and exchange payments, by means of quotas, import prohibitions, higher tariffs, exchange taxes, penalty import rates, and curtailment of exchange allotments for transfer of profits and capital and for travel. Rarely have steps been taken to stimulate exports. On the contrary, there are numerous instances of the use in Latin America of export taxes, restrictive export monopolies, export permit systems, and export prohibitions at the very time when exchange is scarce and balance-of-payments problems are acute.

INFLATION AND EXCHANGE INSTABILITY IN LATIN AMERICA

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Latin-American countries are widely different from one another and no over-all generalization of any significance may be validly applied to them. The economic structure of Honduras and Uruguay or the monetary problems of Chile and Cuba have greater differences than those that may exist between any two European countries. But in spite of these differences, a well-defined pattern can be observed in the behavior of the domestic finances and international accounts of most of them during the last three years. Along with the rest of the world, Latin-American countries have been and still are subject to the inflationary effects of the war. Export industries are working at full capacity, domestic economic activity is booming, and prices continue to rise. But in spite of record export receipts most Latin-American countries are rapidly losing their war-accumulated monetary reserves and experiencing acute exchange problems.

Current developments in Latin America present economists with several interesting problems, actual and potential, practical and theoretical. The current balance-of-payments deficits and exhaustion of reserves, at a time of high exchange receipts, pose the grave problem of what will happen when markets in primary commodities experience an eventual readjustment. The widespread establishment of multiple rates raises the question of their adequacy to meet the situation and of the reason why monetary authorities are showing such a decided preference for this device above other exchange policies. Besides these practical problems, which directly affect the well-being of some 140 million people and their trade and financial relations with the rest of the world, the situation raises technical questions the study of which may cast some light on the mechanism of balance-of-payments adjustments. This paper does not attempt to make a thorough analysis of all problems involved but only to present them and suggest some explanations.

It is generally assumed that "exporting" countries, i.e., raw-material producing countries with a high ratio of exports to national income, tend to develop balance-of-payments surpluses in times of high exchange receipts and deficits when exports decline, and that it is therefore abnormal that they may face exchange difficulties when their exports are at a high level. This is less obvious, however, than it appears to be. A country's international balance does not depend on

the absolute level of exchange receipts but on domestic equilibrium. In theory, at least, prosperity could have a more unbalancing effect than depression, because it tends to induce a larger increase in investments than in savings and hence an import surplus.¹ Depression, on the other hand, could make private investment fall below savings and bring about an export balance. In fact, some industrial countries have roughly followed this pattern in the past. The balances of payments of "exporting" countries have usually followed the opposite behavior owing to the fact that income and import changes lag behind exports and that foreign capital used to flow in during periods of high export receipts and ceased to enter, or even ebbed out, during depression. During the downswing, compensatory government expenditures frequently prevented a complete income adjustment and maintained imports above the level of current receipts. But this does not mean that "exporting" countries have necessarily to follow this pattern. In the current "cycle," the inflow of foreign capital has been negligible and exports have been at a high level for more than seven consecutive years. When the export boom lasts long enough, income is given time to catch up with exports, industrial employment reaches its maximum capacity, the propensity to import increases and a balance-of-payments deficit may develop. Given the low propensity to save in these countries, a private investment boom may easily unbalance their international accounts. Current balance-of-payments difficulties in Latin America do not seem to arise solely from government-generated inflation, but also from the high level of private investment consequent to the present state of booming activity. Current exchange difficulties in Latin America are less "abnormal" than is generally assumed and show—or confirm—the fundamental monetary and exchange weakness of countries with a low propensity to save.

The expenditure of monetary reserves accumulated during the war has enabled Latin-American countries to maintain during the last three years a volume of consumption and real investment beyond their current income. The import surplus, financed with reserves, has come to supplement their current output. The excess of investment over savings has been made possible by a disinvestment in gold. But monetary reserves have declined to a level where they cannot be drawn upon any longer, and Latin-American countries have to reduce their volume of consumption and investment to current income. In the past, underdeveloped countries counted on foreign capital to supplement their low rate of savings and did not have to sacrifice consumption in order to accelerate development. Unfortunately, however, Latin America cannot rely on any large inflow of capital in the immediate future

¹ Since $S = I + (X - M)$ or $I - S = M - X$.

and has to reduce either consumption from its already low levels or investment, with the consequent slowing down of industrialization and development, or both. The decision is hard to make and even harder to implement, but the choice is to bring about the reduction in an orderly manner or through inflation and exchange depreciation.

Exports amount to 20 to 30 per cent of the gross national income of Latin-American countries and are the main independent variable of their economies. From 1938 to 1947 total exports of Latin America increased from 1,936 to 6,622 million dollars, or more than a three-fold increase in value. Responding to this primary stimulus and to domestic private investment and official development programs, monetary income has expanded more than fourfold, and despite restrictions imports have increased from 1,925 million dollars in 1938 to 6,668 million in 1947. Prices and costs of living have risen sharply, but real income probably has increased by 30 to 40 per cent. In spite of shortages during the war and of inflation during and after the war, Latin-American countries have progressed substantially in the last ten years.

It is difficult to get an accurate picture of inflation in Latin America, because official price indexes shown in Table I probably underestimate the real rise. But even if this fact is taken into consideration, it may be said that in most countries wholesale prices have increased to a level of from 200 to 300 of their prewar level, as compared with roughly 200 in the United States. Costs of living have increased considerably more, but are not a good basis for comparison with countries outside the area, because cost-of-living indexes are much more heavily weighted with food prices in Latin America than in the United States or other industrial countries. In no country except Chile is inflation currently advancing at a really alarming rate, and in most countries the pace of the rise is at present slower than in the United States. In Mexico, Brazil, and Ecuador prices were kept stable during the whole of 1947 and part of 1948, and although they have started to rise again, it is still only at a moderate pace. Obviously, the import surplus for the last two years has been a strong anti-inflationary force.

There are no satisfactory data on wage rates. In some countries, such as Mexico, real wages have apparently diminished, but in others—Argentina, Chile, Cuba—wage rates seem to have outpaced the rise in the cost of living. In almost no country, however, is there clear evidence that wage increases have made basic exports unprofitable at the existing exchange rate, but basic industries still seem to be making profits. It may be noted, however, that in general export industries are not expanding. It is possible, and even probable, that profits in export industries are smaller than in domestic trades and that investment is being channeled to these latter. From a long-range point of

view this is a desirable development in countries whose domestic industries need to be expanded, but in the short run it may be weakening their balance-of-payments position.

As stated above, Latin-American countries are in the midst of an investment boom largely financed by commercial bank credit. Con-

TABLE I

	MONEY SUPPLY*			PRICES WHOLESALE INDEX† 1937=100			PRICES COST-OF-LIVING INDEX† 1937=100		
	1945	1948‡	Per cent of change	1945	1948	Per cent of change	1945	1948	Per cent of change
Argentina	6,964	11,527§	+66	193	231	+19	135	189	+40
Brazil	38,690	44,460§	+15	—	—	—	237	363	+53
Chile	7,578	13,843	+84	196	342	+74	244	437	+79
Colombia	473	683	+44	—	—	—	189	291	+54
Cuba	655	1,056	+60	—	—	—	194¶	262**	+35
Ecuador	634	614	- 4	—	—	—	266¶	379	+42
Mexico	3,591	3,511	- 3	214	273	+27	247††	364	+40
Peru	1,098	1,597††	+45	218	391	+79	182	334	+83
Uruguay	438	558	+27	—	—	—	139	175	+26
Venezuela	775	1,170	+52	135§§	178§§	+31	141¶	185¶¶	+31

* Millions of each country's currency.

† On dates corresponding to those of the money supply figures reported, unless otherwise specified.

‡ Data as of June 30, unless otherwise specified.

§ Data as of March 31.

¶ Food prices only.

** As of January, 1948, last month reported.

†† Retail prices.

‡‡ Data as of April 20.

§§ Base year=1938.

¶¶ As of December, 1947, last month reported.

Source: *International Financial Statistics*, September, 1948.

struction is three to four times larger than before the war, and importation of machinery and equipment has risen similarly. In 1939 the United States sold to Latin America 167 million dollars of industrial and agricultural machinery, railway rolling stock, industrial electrical apparatus, automotive equipment (excluding new passenger cars) and merchant vessels; in 1946 these sales amounted to 621 million and in 1947 to 1,267 million.² Deflating these figures by the increase in U. S. export prices, they show that in 1946 Latin-American countries purchased two and a half times as much machinery and equipment as in 1939, and in 1947 four times as much. The volume of imports of steel mill products was five times larger in 1947 than before the war.³

² Excluding sales of ships to Panamanian flag operators controlled by American petroleum companies.

³ Federal Reserve Board data.

In the current investment boom in Latin America, foreign capital has played only a small role, except in Venezuela. In 1947, the net increase in private American direct investment in Latin America amounted to 313 million dollars,⁴ of which 168 million was in petroleum. During the same year portfolio investments decreased by 81 million dollars leaving a net total of 252 million.

Table II shows the increase in the money supply in ten countries from December, 1945, to June, 1948, and the net credit expansion

TABLE II

	MONEY SUPPLY*			INTERNATIONAL RESERVES†			NET DOMESTIC CREDIT*		
	1945	1948‡	Per cent of change	1945	1948‡	Per cent of change	1945	1948‡	Per cent of change
Argentina	6,964	11,527§	+66	5,689	3,153§	-45	1,275	8,374§	+580
Brazil	38,690	44,460§	+15	13,840	15,000§	+ 8	24,850	29,460§	+ 18
Chile	7,578	13,843	+84	534	238¶	-56	7,044	13,605	+ 93
Colombia	473	683	+44	315	171	-46	158	512	+224
Cuba	655	1,056	+60	579	901	+57	76	155	+104
Ecuador	634	614	- 4	445	334	-25	189	280	+ 42
Mexico	3,591	3,511	- 3	—	—	—	—	—	—
Peru	1,098	1,597**	+45	240	140**	-42	858	1,457**	+ 70
Uruguay	438	558	+27	383	408	+ 6	55	150	+172
Venezuela	775	1,170	+52	653	993	+52	122	177	+ 46

* In millions of each country's currency.

† In millions of each country's currency at the official evaluation, unless otherwise specified.

‡ Data as of June 30, unless otherwise specified.

§ Data as of March 31.

¶ Although gold and foreign exchange holdings were revalued in January, 1946, this figure has been adjusted for purposes of comparison to the 1945 parity.

** Data as of April 20.

Source: *International Financial Statistics*, September, 1948.

that same period. Table III indicates the volume of bank credit to government and to business. The figures show that bank credit to the latter has been as responsible for monetary expansion as credit to the government, and in the case of most countries it has been even more so. It is recognized, of course, that without the expansion of central bank credit, generally to the government, secondary expansion by commercial banks would be severely limited; but quantitatively, this latter has been larger in most countries.

The widespread occurrence of budgetary deficits in times when revenues are high and surpluses should be obtained to offset the pre-

⁴ Or 408 million dollars, if 95 million of ship sales by the United States Maritime Commission to Panamanian flag operators controlled by American petroleum companies are included.

vailing inflationary forces obviously reveals that most Latin-American governments nowadays deem it preferable to provide a higher level of services and to finance economic development than to secure monetary stability. In the choice of evils, most of them up to now have preferred the former to the latter. To some extent, it has been a policy of following the line of least resistance, but in some cases it has been a conscious policy. Inflation through deficit financing has been advocated by some Latin-American economists as an expedient, although

TABLE III
BANK CREDIT*

	TO GOVERNMENT			TO BUSINESS			TOTAL†		
	1945	1948‡	Per cent of change	1945	1948‡	Per cent of change	1945	1948‡	Per cent of change
Argentina	2,826	3,522§	+ 25	4,375	8,337§	+ 90	7,201	11,859§	+ 63
Brazil	6,680	—	—	37,160	—	—	43,840	46,470§	+ 5
Chile	2,373	3,435¶	+ 44	7,993	14,957	+ 88	10,366	18,392	+ 77
Colombia	65	128	+ 96	295	523	+ 77	360	651	+ 80
Cuba	—	—	—	111	231	+108	111	231	+108
Ecuador	105	89	- 16	578	798	+ 38	683	887	+ 30
Mexico††	—	—	—	931	1,170‡	+ 25	—	—	—
Peru	620	645**	+ 4	675	1,222**	+ 81	1,295	1,867**	+ 44
Uruguay	5	41	+720	348	551	+ 58	353	592	+ 67
Venezuela	5	6	+ 20	339	609	+ 79	344	615	+ 78

* In millions of each country's currency.

† Total bank credit above does not coincide with the column on "net domestic credit" in Table II because the factors of contraction of the money supply, such as non-sight liabilities of the banking system, are not computed.

‡ Data as of June 30, unless otherwise specified.

§ Data as of March 31.

¶ Includes 1,380 million pesos corresponding to devaluation profits accruing to government (see note ¶ on Table II).

** Data as of April 20.

†† Commercial banks only. No data on central bank assets available.

Source: *International Financial Statistics*, September, 1948.

admittedly unfair, form of taxation, as a means to reduce consumption and liberate resources to accelerate the pace of development. In a recent article, a well-known Mexican economist describes the attitude of those who favor development through "forced savings" in the following manner: "The conviction that the decisive thing is to produce more has defeated the generous, although vague, decision of achieving a fair distribution of wealth. No standard of justice, however high, will give Mexico a better standard of living if the collective poverty of the country is not conquered first." But later in the same paper he warns that "this means of promoting investments, through involuntary

savings resulting from a government-sponsored monetary and credit expansion, cannot go on indefinitely."⁵

Since December, 1945, monetary reserves of Latin-American countries have declined from 3.7 billion to 2.9 billion dollars in June, 1948. Gold and dollar holdings declined from 3.2 billion to 2.0 billion in the same period. Of the countries facing balance-of-payments difficulties, one—Mexico—has depreciated its currency by more than 40 per cent, and the rest have tightened their import and exchange controls and/or introduced new multiple currency practices. Ecuador, Bolivia, Brazil, Colombia, Costa Rica, and Peru have introduced new exchange taxes or multiple rates; Argentina, Chile, Paraguay, and Uruguay have modified in one way or other their previous systems.

Multiple currency practices have been used in the past to subsidize or tax selected groups of exports or imports, and/or to favor trade with certain countries and curtail it with others. At present their main objective in most countries is to discourage nonessential imports without taxing essentials or giving exporters the benefit of a higher exchange rate. A common technique in Latin-American countries is to maintain the existing rate for exports and essential imports and to create a new higher rate or rates for semiessential and luxury imports. A variant is to permit the importation of these latter products if they are financed with free market funds; i.e., nonexport proceeds or export proceeds of certain products which do not have to be sold to the control authorities. Multiple rates are, in fact, selective devaluations, which at the same time operate as export-import taxes⁶ and raise badly needed government revenue.

In order to understand the rationale of multiple rates, it is necessary to examine the peculiarities of the situation in which they are being applied. In the current balance-of-payments disequilibria in most Latin-American countries, the official par value is not high enough to check imports within the limits of current exchange receipts, but, as explained above, does not in general hamper the flow of exports or, at least, of the basic export products of the country. In these circumstances, devaluation to an equilibrium rate for imports would give excessive profits to export industries. The situation looks puzzling at first glance, because it does not seem logical that inflation should seriously affect costs in domestic industries competing with imports and

⁵ A. Carrillo Flores, "El desarrollo económico de México, Reflexiones sobre un caso latinoamericano," *Cuadernos Americanos*, September-October, 1948, pp. 48, 52.

⁶ Exchange spreads may be considered either as taxes on exports or on imports. There is no real difference between the establishment of a uniform surcharge on the import rate and devaluation with a general export tax. In the first case, the measure looks like a tax on imports; in the second, like an export tax. The economic effects of both are precisely the same.

not those in exporting industries. In fact, this does happen to a certain extent, because the terms of trade of these countries have improved, prices of their exports having risen more than those of imports, and hence export industries are capable of standing higher increases in costs. But, in addition to the steeper rise in export prices, the explanation of the distortion lies in the fact that imports have increased primarily because of the general increase in incomes and only secondarily because of their competitive price advantage over domestic products. So far, there has been very little displacement of national products by imported goods, and no significant reduction in the output of domestic factories or unemployment due to this cause is noticeable. The principal cause of balance-of-payments difficulties is that consumption and investment are larger than the country's output and excess demand spills over into an import surplus.

Since the balance-of-payments disequilibria under study are due more to overinvestment than to price and cost disparities, devaluation in itself may not be considered as the appropriate corrective. If the economy is in a situation of full employment or near full employment, devaluation cannot be effective in expanding exportable output nor in developing domestic substitutes for import goods.⁷ Devaluation is generally objected to on the grounds that it aggravates inflation by raising import costs and increasing exporters' incomes. But it must be realized that when a country is overimporting, any measure that eliminates the import surplus and consequently reduces the available supply of goods aggravates inflation unless it correspondingly reduces money incomes. When resources are fully employed, the elimination of an import surplus necessarily means less consumption and/or investment. The reduction in consumption has to come through a reduction in real consumers outlay, whether through rationing or through price increases. In the latter case, if prices are to be kept from rising continuously, incomes have to be stabilized at the new high level. The reduction in investment may be attained either through direct measures limiting public and private investment, i.e., building controls, or through restrictive credit and fiscal policies. The alternative policies to be considered, therefore, are deflation, quantitative restrictions, and total or partial devaluation coupled with a policy of fiscal and monetary stabilization. To this latter category belong the Latin-American types of multiple currency practices.

Deflation is neither politically feasible nor technically advisable. Deflation yields results only gradually, and its application requires the

⁷ With depreciation, it is of course true that of the output of export goods more would be exported and less consumed domestically and that consumption could shift from import goods to domestic goods, even when they are not direct substitutes.

availability of reserves to finance the import surplus until the contraction of incomes becomes effective in reducing imports. It may lead to considerable unemployment in industries producing domestic consumption goods, unless extremely favorable conditions exist both for the mobility of labor from the investment industries and for the shift of demand from imported commodities to domestic substitutes at slight price differentials; and if inflation has affected the price and wage structure of the country to any significant extent, the adjustment through deflation would provoke an undesirable degree of social friction and economic losses through strikes.

Quantitative restrictions on imports and exchange allocations are effective for eliminating rapidly the balance-of-payments deficit and for reducing imports in a selective manner, completely prohibiting or curtailing those economically and socially less useful and allocating the exchange resources to the purchase of more desirable goods. But in order to produce really beneficial effects to the economy, quantitative restrictions must be efficiently administered and have to be supplemented with domestic rationing and price control. If not, they hinder the smooth functioning of the economy and become a source of monopoly profits for the privileged importers who are granted import permits. The experience in Latin America has been largely negative. Governments have found them unmanageable as soon as the pressure of demand becomes heavy, business in general has complained bitterly of delays and arbitrariness, and consumers have not benefited at all from them. Only licensed importers have profited. The failure of quantitative restrictions has been a major factor in the introduction of multiple rates.

As stated above, a multiple rate system is a selective devaluation and, at the same time, can be an expedient and high-yielding tax. The objectives of multiple rates are to prevent the rise in the cost of essential imports, to discourage the importation of nonessential and luxury goods, and to capture as government revenues the profits that would have accrued to exporters if uniform devaluation had been applied or to licensed importers if quantitative restrictions had been established. If the government does not use the new exchange revenues to increase expenditures, multiple rates have a restrictive effect, both on the economy and on the monetary system. Multiple rates have the effects of devaluation coupled with export taxes and subsidies to essential imports.

If adequately applied, multiple rates may be a useful exchange and monetary device. In Ecuador they have served to eliminate the import surplus without any perceptible rise in prices⁸ and to absorb excess

⁸ The success was helped, however, by special circumstances: prices, and importers' profits were extremely high due to previous restrictions. Five months before the estab-

monetary liquidity. They cannot, however, prevent the hardships involved in the necessary reduction in import supplies. The most common fault in the application of these systems is the attempt to include most imports in the preferred (low rate) list and to place the whole burden of the higher rate on only a small category of luxuries. If the system is not restrictive enough, it cannot eliminate the import surplus. Another common error is to try to maintain the lower rate for exports and essential imports when inflation has pushed up the free or black market rate beyond a reasonable relationship to the former. Under such conditions, exports may be restrained (or at least, receipts from exports diverted from the official to the black market) and consumption of imports encouraged at the expense of domestic goods.

These are the basic shortcomings of multiple exchange rates. First of all, if not carefully managed, they may hinder exports. If the need of export industries for an adequate incentive to expand or maintain production is underestimated, investment in them may be discouraged. On the import side, the development of domestic industries for the production of essential goods may be discouraged by the subsidy given to imported essential goods. It can also be said that multiple rates are a step backward in taxation, because they are related to the capacity of the public to pay taxes. In spite of these shortcomings, a system of multiple rates can be a useful device for meeting Latin-American exchange problems under the present abnormal conditions. As a long-run solution, however, they do not seem to meet the fundamental needs of Latin America in the field of taxation, economic development and exchange policy. The current exchange difficulties of Latin-American countries are mostly a reflection of their desire to accelerate economic development, and development can only be accelerated without undue hardship to low-income consumers through a more efficient use of available resources or the assistance of foreign capital. The temptation will always be strong to seek a short cut through inflation and exchange devices unless and until technical and financial assistance is available for Latin-American development within the framework of domestic and international stability.

lishment of the system, import controls had been lifted and a huge inflow of goods was entering the country without having had time yet to disinflate prices. The deflationary effects of these imports became apparent when the new system was established and came to offset the effects of the increased rates and subsequent curtailment of imports to an equilibrium level.

DISCUSSION

HENRY W. SPIEGEL: Some time has passed since the economic affairs of our good neighbors have been the subject of discussions before this forum. This hiatus may well be indicative of a decline of the public interest in Latin-American problems—a decline that is the more conspicuous because interest in these problems was so lively during the war. But to my mind the papers by de Beers and Pazos prove by their high quality and important content that this pause was only momentary and that it has been used widely for deeper reflection and analysis.

Both papers, though they are devoted to the burning issues of the hour, express concern about the fundamental maladjustments of long-range significance which continue to plague the peoples to the south of us. At first glance I was much impressed by Dr. Pazos' opinion that real income in Latin America probably has increased by 30 to 40 per cent during the past decade. Naturally, this is not to be interpreted in the sense of a proportionate increase in consumption. But even so, a 30 to 40 per cent increase, if distributed among a population that grows at an annual rate of 2 per cent, does not indicate stagnation of per capita incomes. At the quoted rate of population growth, an over-all increase of 33 per cent would just suffice to maintain per capita income over a twelve-year period.

While real income thus apparently has been maintained and perhaps moderately improved, there are grave doubts whether the same can be said of consumption. As all of us know, consumption in Latin America is continuously depressed by inflation. Inflation in these parts of the world is quite unlike the boom-and-bust phenomenon which we study in the economic models cut to the patterns of the more highly developed countries. In some Latin-American countries, at least, inflation is a secular upward movement of prices which is only on rare occasions interrupted by short-lived deflations. It is a long-term trend rather than the phase of a cycle. Naturally, the rate of the upward movement varies. As this rate shot up with unusual vigor during the past decade, its restraining impact on consumption is likely to have been especially severe.

Both Dr. Pazos and Dr. de Beers have indicated their awareness of the significance of the inflationary trend although they did not characterize it as the quasi-permanent phenomenon which it is in some Latin-American countries. Permanence, however, must not be interpreted as identity or uniformity. On reflection it seems to me that the term "inflation" as applied to the Latin-American economies is really of a twofold nature. We should recognize the dividing line which separates the wartime inflation from the prewar phenomenon of the same name, and we should recognize further that the present inflationary process has resumed again the characteristics of prewar inflation. The behavior of gold and foreign exchange reserves, it seems to me, is the most adequate criterion for distinguishing either type of inflation from the other. Inflation which occurs while gold reserves increase is different in its causes and incidence from inflation which attends a decline of gold reserves.

The violent price upheavals of the war period were examples of the first type of inflation. At that time, the rapid increase in export balances accounted for a large influx of foreign exchange and gold. The ensuing monetary expansion entailed higher prices, since the stimulation of the rate of investment as represented by the export balance was not adequately offset by voluntary savings.

The inflationary process of the war period was different from what may be called the ordinary type of Latin-American inflation. It was also characterized by an unusual violence. Inflation of the ordinary variety, while chronic, is generally more lenient. It tends to occur as a part of the well-known pattern of Latin-American economic life with its budgetary deficits, inelastic production, and balance-of-payments difficulties. It is ordinarily accompanied by exchange depreciation. In a simplified sequence of these phenomena, a budgetary deficit causes incomes and prices to swell. Goods which might be exported are diverted to domestic purchase, and imports are stimulated. The balance-of-payments position deteriorates and is eventually relieved by exchange depreciation. Devaluation increases the relative attractiveness of the export trade and discourages imports. But eventually costs catch up, new budgetary deficits are made, and the cycle starts anew.

In the light of these considerations I would like to turn to a number of statements made by Dr. Pazos. He observes that the Latin-American export business continues to be profitable in spite of the upheaval of the cost-price relation caused by the increase in cost in terms of domestic currencies while exchange rates on the whole were kept stable. This observation checks sufficiently well with such evidence of Latin-American profit rates as we have at hand. It seems to me, however, that the disturbance of the customary cost-price relation may well be considerable, without having resulted in a complete elimination of profits from export trade. If costs increase faster than the proceeds from exports, as they did during some periods of the immediate past, the exporters' profit rate is bound to fall.

If the profit rate is as substantial as is often the case in Latin America, such a decline may take place without resulting in zero or negative profits. But it seems to me that without the assumption of such a decline, actual or anticipated, it is hard to see why, as Dr. Pazos holds, export industries have failed to expand. We have noted that the traditionally high profit rate of the Latin-American exporter is closely related to a process which combines domestic inflation with exchange depreciation. Domestic inflation in the face of exchange stability will create a situation acceptable to the exporter only if there is a compensating rise in the prices which prevail in foreign markets. As the foreign price curve flattens out, increased costs make for a reduction in profits. In this situation, exchange depreciation would seem to provide the desired relief.

Dr. Pazos points out, however, that devaluation cannot be effective in expanding the exportable output in a full-employment economy. It seems to me that devaluation, while it might not expand aggregate output, would divert goods from the domestic to the export market by restoring the customary cost-price relations. After all, full employment is nothing new in

Latin America where unemployment commonly exists chiefly in the so-called "disguised" form. Moreover, devaluation places an effective ceiling on imports.

Precisely on account of the characterized cost-price relations there are serious doubts about the efficacy of a multiple rate system as compared with plain devaluation. The multiple rate system, if it lives up to the purposes of its creation, will tend to transfer to the government the profit increment which in the case of a plain devaluation would accrue to the exporters.

It is quite another question, however, whether modern political conditions would support the continuation of the age-old trend of inflation and exchange depreciation. The enforcement of saving and the restriction of consumption which are entailed by this process are liable to meet increasing opposition on the part of vociferous labor leaders. The standards for their demands are set by conditions which prevail in the more highly developed countries, where advanced industrialization and ample capital equipment make a high level of real wages feasible. In this respect belated economic growth poses problems with which the countries which are now mature did not have to cope when they were at the threshold of their respective industrialization programs.

The business community, on the other hand, is likely to resist attempts at any profound modification of the customary cost-price relations. The resulting tension will make for political instability. Relief can be provided in the first line by capital movements from the United States which will lift the productivity of labor and of natural resources. If this happens, the ensuing changes of the proportions in which the factors of production co-operate will by themselves contribute to a rearrangement of the cost-price structure.

FELIX J. WEIL: When the papers by Mr. Pazos and Mr. de Beers were delivered, the tables were skipped, but it is just to the statistical tables that I have to register an objection: they refer to "the Latin-American economy," but I think "there ain't no such animal." The economic conditions of the Latin-American countries are so different and their interests in some cases so opposed to each other that I fail to see how lumping together data of all countries could produce a meaningful picture of a so-called "Latin-American economy."

As a specialist on Argentina, I could not say much about the data on the other countries, but I have to criticize those on Argentina. I realize the difficulties involved in trying to get comparable figures. But if I wanted to show the development of "money supply" as related to the "wholesale prices index" or to "net domestic credit," I would not have compared, as Mr. Pazos did, in his Tables I and II, data of March or June, 1948, with those of 1945. I would either have taken as my starting point 1943, the year the military dictatorship was established and proceeded to reorganize the Argentine economy, or 1946, the year Perón's Five-Year Plan took effect. This would have given us a much more significant comparison.

Somewhere in his paper Mr. Pazos states that the current investment boom in Latin America has been "largely financed by commercial bank credit." As far as Argentina is concerned, this is not quite correct. "Commercial bank credit" in the traditional sense does not exist any longer in Argentina, since,

in May, 1946, not the banks themselves but the credit system was nationalized. Since then all customers' deposits in the commercial banks are held for account of the Central Bank, and bank loans can be granted—to the extent that they exceed the bank's own capital and reserves—only by permission of, and with funds supplied by, the Central Bank. Thus investments in Argentina since then have been largely financed by government credit rather than by commercial bank credit. Another distinction that became old-fashioned as far as Argentina is concerned is that between bank credit "to government" as different from credit "to business" (Table III of Mr. Pazos' paper). In Argentina's state-controlled economy such a distinction has become meaningless. If the state-owned steel company needs money, it may get a loan from the Central Bank or from the Treasury. The Treasury, in turn, may have to borrow the money from the Central Bank. In the latter case, the loan would appear under the heading "credit to government." In the former, it would be considered a loan "to business." We see how obsolete these distinctions have become.

To Mr. de Beers' paper I have very little to add. I regret that he did not have the opportunity to show how Argentina's present predicament—the dollar shortage—came about: Perón relied too much on Britain's promise to pay in "convertible" sterling and on Ambassador Bruce's calculations about ECA's dollar millions that would be spent for Argentine goods. Of course, Argentina in her haste to convert sterling into dollars herself contributed largely to the conditions which forced Britain to revert to inconvertibility. And it is true, too, that Mr. Bruce's calculations were not meant as a promise that ECA would really be spending that many dollars in Argentina. But it is not difficult to visualize, how, spurred on by some wishful thinking, Perón thought he had reasons to expect that Britain would somehow get the dollars she promised and that, though no firm commitment had been made, at least 800 million dollars would come from ECA.

Speaking of ECA, I should have welcomed also an analysis of the Latin-American countries' reaction to the Marshall Plan. On the short run, the expected flow of ECA dollars seemed to hold out a promise for many dollar-short Latin-American countries. From the long-run viewpoint, however, they all now fear that American help to Europe, under the present conditions, might not lead to a restoration of the European countries' traditional ways of commerce but to new forms of trading which might not be as beneficial to the Latin Americans as was originally believed. And if we realize how little now is left of the much ballyhooed Good Neighbor Policy, we begin to understand how big the disappointment of many Latin-American countries has become.

VICTOR L. URQUIDI: Rather than comment on any details of the two excellent papers by Mr. Pazos and Mr. de Beers, I would like to confine my remarks briefly to some general conclusions to which I think they lead. The subject would of course require a lengthier discussion and I am aware that a summary statement like the present one will seem superficial and inadequate. Evidently no stopgap method of correcting the balance-of-payments

disequilibria is satisfactory; and all methods are stopgaps where the prime disequilibrating factor is—as occurs now in most of the Latin-American countries—the urge to develop, which is not explained by economics alone.

In looking at Latin America's postwar problems both Anglo-Saxons and Latin Americans have been apt to take extreme positions. The former have often said: "First control your inflation, balance your budget, streamline your exchange system, reform your tax system, plan your investments and stabilize your political situation—put your house in order, as the phrase goes in certain quarters—and then we'll see what foreign exchange assistance may be made available to you." The latter are apt to say—less apt today than two years ago: "We need so many billion dollars to stabilize our currencies and promote development, and we want them right away." Both extreme positions are of course unrealistic and in fact self-defeating. The correct attitude lies somewhere in between, depending on the conditions in each particular country.

As shown by Mr. Pazos, inflation and exchange instability have differences of degree in many Latin-American countries, and Mr. de Beers has shown how for some countries in South America the problem is largely one of converting their holdings of European currencies into imports of equipment from Europe or into free currencies. But the main problem—not essentially different from that of Western Europe—is how to maintain high levels of investment and consumption—one should also say an increasing share of consumption for the lower income groups—without running into insoluble balance-of-payments problems or progressive devaluation of the currencies. This is a task that, if not requiring something akin to a Marshall Plan—for self-respecting Latin Americans do not want gifts (in spite of what a writer signing himself "Acierto" insinuated last year in a rather aggressive article published in Washington)—calls at least for a bold and intelligent program of foreign exchange assistance, both short-term and long-term, on the part of existing international financial organizations, similar official agencies in capital exporting countries, and private capital. The co-operation of all these sources is called for, and there is room for public as well as private enterprise. But in contrast with nineteenth century experience, the present era requires both an increasing emphasis on the production of goods for the domestic market rather than on mere raw materials for export, and a modified concept of the profit motive. The foreign exchange program should not, in any case, be a mere unilateral gesture; on the contrary, since it would be in essence a financing of extraordinary imports, it should entail on the part of the borrowing or recipient nations a constructive program of self-help designed to promote rational economic development and make the most productive use of those extraordinary imports.

Short- and medium-term financing can help Latin America to tide over the period during which heavy investments in power, irrigation, transportation, iron ore and other minerals, agricultural equipment, etc., do not yet result in increased production; thus exchange stability would be promoted and the undesirable consequences of cutting off imports would not arise. At the same time, the long-term investments would be guaranteed and secure and—

provided domestic policies are prudent—the Latin-American balance-of-payments difficulties should largely disappear.

It needs to be emphasized, of course, that a very essential element for such a program—and this again is fully realized in connection with the ERP program—is that the borrowing or debtor countries formulate and pursue investment, fiscal, and monetary policies that are consistent with the best economic use of foreign funds. There must be simultaneous action from both sides. It is obviously a difficult path, certainly more difficult than prescribing one or the other of the two extreme positions mentioned above, but the only one that makes sense from an economic and political point of view if “economic development” is to be something more than dragging out a subsistence standard of living for the next generation. At least it does not make sense not to make available any substantial financial assistance to Latin America, but yet to ask Latin-American countries to maintain stable and orderly currencies, refrain from raising tariffs, increase food consumption, and practice every virtue of sound finance.

Development and higher consumption are vital aims in Latin America, as they are today in Europe and other places. In Latin America, despite present financial, monetary, and technical difficulties, there is faith in the future and in a better and more productive existence. There is pride in national effort and there is optimism and enthusiasm such as is said to have existed in the United States in its rapidly developing era in the past. The problems of Latin America are very complex and cannot be solved overnight, but some of them, such as those pointed out in the papers by Mr. Pazos and Mr. de Beers, could be greatly facilitated if proper focus is given to the development problem. A bold program along the lines I have indicated, linked to national development policies, would be fruitful for both lenders and investors, on the one hand, and borrowers, on the other. When a car runs out of gas, the solution is not to stand and lecture the driver on how to adjust the carburetor, but to lend some temporary fuel to enable the car, under its own power, to reach the next filling station.

GEORGE WYTHE: I am in substantial agreement with the analysis of the trade and balance-of-payments problems presented by Dr. Pazos and Mr. de Beers, but I regret that they did not go a step further and attempt an answer to the question, “Where do we go from here?”

Before peering into the future, however, let us take a backward glance at the developments which followed the first World War. In most essentials what occurred at that time was similar to developments of recent years. The principal difference this time has been the long continued shortages of certain types of goods, chiefly capital goods, and the maintenance of export control by the United States. Both periods were characterized by expansion of circulating media and credit inflation in Latin America. The initial impulse in both cases came from heavy exports at high prices, accompanied by a reduction in the volume of imports.

Credit expansion to facilitate development programs also occurred in the earlier period. In practice, then as now, a large part of the money went into

real estate or commodity speculation or into conspicuous consumption. In recent years there has been more conscious national "planning," more emphasis on industrialization, more governmental intervention, and relatively more dependence on domestic financial resources.

Reference has been made to the fact that aggregate Latin-American exports in 1947 reached the unprecedented amount of nearly 6 billion dollars and that the 1948 total may be even larger. The outlook for most Latin-American export products continues favorable: petroleum, metals, nitrate, coffee, cacao, vegetable oils, wool, to mention a few leading items. The outlook for sugar is less favorable, and the position of grains has changed as the result of the large United States crops and the revival of agriculture in Europe. Latin-American imports are also continuing at very high levels, despite restrictions and exchange shortages.

It is difficult to discuss intelligently the outlook for improvement without considering the problems of individual countries, and time does not permit me to go into details. But I may note that most of the seven or eight countries that do not have serious exchange difficulties find their principal market in the United States: Cuba, Haiti, Panama, Guatemala, Honduras, and El Salvador. The seventh country, Venezuela, has no difficulty in obtaining dollars (partly through ECA) for such of its exports as do not go, directly or indirectly, to the United States.

Mexico has run into exchange difficulties despite the fact that the bulk of its exports are sold for dollars, as have Costa Rica, Nicaragua, Colombia. The basic difficulty in this group of countries is the excess of purchasing power in local currencies over the current level of exchange availabilities, but there are some special problems in each case. The inflationary pressure is weakening in some countries but remains strong in others. The devaluations in Mexico and Colombia may hasten the necessary readjustments.

These problems, as well as other difficulties, exist in those republics that normally find their chief market in Europe, especially Argentina, where the situation is further complicated by pricing and trading practices. The foreign trade pattern in Uruguay is similar, but it is able to sell a larger proportion of its exports for dollars. Chile can dispose of most of its exports for dollars, but looks to Europe for outlets for its wool, meat, and minor agricultural products. Peru's exports of cotton and sugar go principally to the United Kingdom. The United States is Brazil's best market but cannot take its cotton, tobacco, or oranges, nor all of its coffee, hides, and other minor export products.

Despite the difficulties of the present moment, I may venture to express restrained optimism that improvement may come more quickly than we are apt to expect at present. Already the position of Ecuador, for example, is much better. Readjustments are taking place elsewhere through better control of credit inflation and budgetary expenditures, through outright devaluation or through partial devaluation by means of multiple exchange rates.

Although "off-shore procurement" has been a disappointment to Latin Americans, possibly we can find some consolation in the fact that the balancing of accounts with Europe may be worked out on a sound basis sooner

than if the realities of the situation had been obscured by large-scale financing. Despite the continuing strong preference for American merchandise, imports from Great Britain and from Continental Europe are increasing. In 1947, Europe (including the United Kingdom) furnished about 20 per cent of aggregate Latin-American imports, as compared to 15 per cent in 1946, 10 per cent in 1945, and 48 per cent in 1938. Only partial returns are available for 1948, but British exports to the Latin-American republics rose from £36 million during the first six months of 1947 to £54 million during the same period of 1948. Both periods represent an important increase over the corresponding 1938 figure of £18.4 million.

The figures tend to confirm Mr. de Beers' observation that the trade of the Latin-American countries is moving toward a bilateral balance with the individual European countries and with the United States. Although a bilateral balancing of accounts is unfortunate from various points of view, it may be a necessary stage in the road back to convertibility and multilateral trading.

GERALD ALTER: First, I should like to correct the interpretation given by Mr. Weil to the monetary data cited in Mr. Pazos' paper. It is my understanding that the International Monetary Fund in its series on the money supply defines "currency" as notes and subsidiary money, less currency holdings of the Central Bank and other banks. "Deposit money" is exclusive of interbank and government deposits and includes only demand deposits. Thus the series on the money supply in Argentina is generally consistent with a concept of means of payment in the hands of the public.

Professor Spiegel claims that Mr. Pazos is inconsistent in arguing that exchange rates applicable to Latin-American exports have not generally been overvalued in the sense of interfering with a high level of exports, while they may have been overvalued in the sense of interfering with investment in export industries.

I agree with Professor Spiegel that Mr. Pazos' views appear inconsistent on this point. Although it is impossible to generalize about all the Latin-American republics, I should agree with Mr. Pazos that devaluation of exchange rates would not have materially increased the volume of exports (and thus foreign exchange receipts) in most countries during the past three years. I think it is generally agreed that export industries have been operating at capacity levels; that is, relatively little in the way of additional resources would be diverted to export industries by exchange devaluation.

With respect to new investment in export industries, I should argue that the current level of exchange rates applicable to exports has little to do with these investment decisions. Expectations relating to future prices and future costs are not materially influenced by current exchange rates, and it is these expectations which are important in determining the volume of investment in export industries. If investment has been lagging in export industries, I suspect it is related to the generally held view that agricultural and raw material prices are currently at unusually high levels and will probably decline. The view cited by Mr. Spiegel that the terms of trade may continue

to be favorable to the Latin-American republics for some years ahead is, rightly or wrongly, probably not held by those responsible for investment decisions in Latin America. It should be noted that where long-term prospects appear good, for example in the case of petroleum exports, substantial investments are being made.

A strong case can therefore be made for resisting devaluation of exchange rates applicable to exports under the conditions prevailing over the past several years. The case made by Mr. Pazos for multiple rates—or dual rates, at least—is thus strengthened. In fact, it may well be argued that since export prices of Latin-American products increased substantially, it would have been desirable to reduce the domestic currency equivalent of foreign exchange accruing to exporters. Certainly the tremendous increase in the domestic-currency value of exports has been one of the major inflationary factors of Latin-American economies. Appreciation of exchange rates applicable to exports or, even better perhaps, the imposition of higher export taxes by many of the Latin-American republics at the time when OPA price ceilings were removed, might well have been an appropriate compensatory fiscal policy.

Although balance-of-payments considerations might have dictated some selectivity in the application of export taxes, generally higher export taxes would have promoted domestic economic stability. Explicit use of export taxes as a compensatory device, both in booms and recessions, should be given careful consideration in countries where exports constitute as much as 20-30 per cent of the gross national product.

COMMODITY MARKETING—GOING WHERE?

Under the chairmanship of John D. Black, Harvard University, a joint meeting of the American Economic Association and the American Marketing Association held on the afternoon of December 29, 1948, considered the general topic: "Commodity Marketing—Going Where?" Abstracts of the five papers follow.

APPRAISAL OF MARKETING RESEARCH

By J. K. GALBRAITH
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A few months ago, after several years of preoccupation with other matters, I set about familiarizing myself with the research now under way into the organization and behavior of markets, particularly those for farm products. I cannot say that it was an exciting experience. Even making allowance for the war and the years when others, also, have had their attention diverted to pressing matters of current policy, one must still be inclined to view the progress of research in this field with some concern.

I do not imply that a critic at large fails to find evidence of interesting and important work. For example, there is the important series of studies which has recently been completed on the marketing of milk in the New England area. After working out the economies associated with a rational system of milk distribution in two urban areas, the authors of these studies went to a sample of consumers to inquire if the resulting savings—which, it need hardly be said, were considerable—were sufficient to induce them to forego alternative sources of supply or to give up permanently the daily deliveries and other services associated with what we choose to call free competition.

I also look with general approval on the "consumer preference" studies that have become popular in recent times. To be sure, the primary motivation of these studies so far has been the hope that they would lay the basis for a larger consumption of surplus products. I have serious doubts whether such studies are useful for increasing consumption. On the other hand, exploration of consumer tastes and desires may well be a needed adjunct to the price system. Where the price system does not or cannot reflect the preferences or desires of the consumer, the study of these preferences would.

I should like, if time permitted, to say a good word about certain of the work now being launched under the auspices of the Research and Marketing Act of 1946. However, my main purpose is to identify a source of frustration in present marketing work. Most marketing

research is concerned with efficiency. The frustration is the result of a problem in unit and interunit relationships in the field of distribution. Stated dogmatically, whatever inefficiency exists in marketing is rarely found in correctible form in the individual unit. The research worker thus comes, as he must, to the inefficiency of the complex of units that compose the market.

Here is where the difficulty arises. There is a strong reluctance to imply that any legitimate businessman is unnecessary—and an even greater reluctance to suggest that, in the interests of a better use of resources and a more economical distribution system, he should go out of business. More important, there is a sharp though rarely recognized conflict here with a strongly held tenet of our economic theology, that of the importance and virtues of small businessmen, who find their major stronghold in distribution. Finally, to rationalize distribution along these lines involves administrative and political implications in that it would require the replacement of small firms by bigger ones or a great extension of social organization and direction.

Here then is the dilemma of marketing research. The most important and promising line of economic analysis tends to conclusions sharply at variance with conventional attitudes. It implies solutions that are unpalatable, perhaps in some cases no less to the researcher or the community than to the concerns involved. The search for efficiency leads directly into a conflict with other values and into a conflict also with vigorously vocal interests.

What is the answer? It is not, as at present, to evade the issue—to stop just before the unpleasant terrain is encountered or to retire into description. But neither is it to assume that because the market does not yield the optimum interunit organization, the answer is inevitably change. Controls, too, have their cost function. It may well be our choice—in fact I suspect it will often be our choice—to exchange less than optimal efficiency in distribution for less complex government. It is the task of research, however, to illuminate the full nature of the bargain.

MERCHANDISING FLOW SURVEY ON MEN'S CLOTHING

By ALFRED CAHEN
Dun & Bradstreet, Inc.

Early in 1945 Arthur D. Whiteside, president of Dun & Bradstreet, Inc., told a convention of the National Retail Dry Goods Association that retailers must learn to judge the rates of consumption of their goods more accurately in order to avoid the consequences of overbuying. Shortly thereafter his company originated the Merchandise Flow

Survey, which obtains from a panel of 1,400 retailers quarterly reports on unit sales and unit stocks of men's clothing by price lines.

Similar surveys are made of clothing manufacturers by the National Credit Office and of wool fabric mills by the National Association of Wool Manufacturers. Taken in conjunction, the three surveys provide a periodic report on the flow of wool clothing from fabric weaver, through the cutter and the retailer, to the consumer. They also show whether stocks are accumulating at any one of the three stages.

The report for the quarter ended October 30, 1948, for example, showed that sales of retailers were 17 per cent lower than in the corresponding quarter of 1947 and stocks 55 per cent higher. These changes were reflected in a drop of 26 per cent in sales by suit manufacturers and a drop of 51 per cent in sales by fabric manufacturers. The sharp increase in the percentage of the sales decrease back through the stages of manufacture is what would be expected in accordance with the familiar principle of the acceleration of derived demand.

Since the stocks of retailers are reported by price classes, the flow survey also shows whether difficulties as they develop are concentrated in particular classes or spread over them. The report as of October 30 showed that when measured in terms of number of weeks' unit sales, the accumulation of stocks was much greater in the higher than in the lower price ranges. Even in today's slow market, consumer demand persists for popular price garments. The opposite situation was revealed by the initial survey three years ago. At that time veterans with dismissal allowances were clamoring for garments and chose quality rather than price. After the demise of OPA in November, 1946, prices rose rapidly in 1947, and high-price garment production outstripped consumer demand in 1948.

The Textile Foundation in a report in 1941 on *Inventory Policies in the Textile Industries* recommended as follows: "In order to keep its own operations abreast of business changes, a mill management should watch not only the fabric market but also those for wholesale and retail clothing." Also, "the commitment position of buyers at each important intermediate market between mill and consumer is suggested as a means of forecasting 'business weather.'" The merchandise flow survey on men's clothing, which helps make these suggestions feasible, can be a pattern for other industries—tracing the movement of goods from processors of raw materials to ultimate consumers and measuring inventories throughout the system.

You may rightly ask, why is the men's clothing trade in a moderately unhealthy condition today despite this wealth of facts and figures? Well, as a practical matter, how many of us go to the dentist in advance of a painful toothache? Compilation of statistics is only the first step.

The use of data as an effective aid in business judgment requires a long educational process.

WHAT'S AHEAD IN BUILDING MATERIAL MARKETING?

By ARTHUR A. HOOD
Vance Publishing Corporation

We define a building material as an unfabricated or incompletely fabricated item used in construction, whereas a building product is an item ready for use by consumers, such as a house ready to move into, a barn erected, a roof applied, a window unit installed, or a heating system ready to function. Our subject might better be stated: "What's ahead in building *products* marketing?"

Experts predict a 25.5 billion dollar construction volume in 1949. This divides into roughly 10 billion dollars in light private construction, 10.5 billions in heavy private construction, and 5 billions in public construction. We shall limit our treatment here to light construction for three reasons: heavy and public construction will probably witness few marketing innovations in the coming year; light construction, being sold to family consumers, lends itself to creative merchandising; and the pressure for marketing improvements is almost solely in the area of home and farm building.

In the light construction field the customary channel of sales and distribution is manufacturer to his industry's type of wholesaler, then to the same industry's type of material retailer, and finally to the building contractor on the site—the consumer sale having been made by a residential building contractor, a lumber and building product dealer, or an operative builder.

Forces that are bringing pressure for changes in marketing methods include: (1) recent decreases in sales volume; (2) widespread accusations that the industry's methods are archaic; (3) the near success of the law for socialized housing in the 80th Congress; (4) the fact, shown in a detailed analysis, that of the price paid by the consumer for a new small home, only 27 per cent on the average was the f.o.b. factory cost of materials and mechanical equipment; (5) the fact that prices of new homes are too high for the majority of family incomes; (6) the lack of skilled manpower to fabricate the industry's production.

To improve this situation, the industry is introducing a number of marketing innovations of two sorts: those tending to improve traditional procedures and those that depart from orthodox marketing channels. The ones introduced into the orthodox channels include:

1. The so-called "industry-engineered" house program. This de-

velopment involves partial standardization of design, modular dimensions, and interchangeability of materials, and the use of procedures to reduce on-site labor costs. Savings of nearly 10 per cent in the erection of an orthodox small home are possible under the plan.

2. A single specification for the erection of small homes in cool-cold climates. This specification would suffice for the entire country with but two variations: one for the hot-dry area and another for the hot-moist. It will permit partial standardization of small home construction.

3. An economy house being developed by the National Association of Home Builders. This will get industry-wide consideration at their annual convention in February, 1949.

4. Continuing research looking for a single minimum house that will embrace every conceivable economy and still be a livable and expandable home. Along with this goes a search for ways to reduce the wide differences between the cost of such a house in different places. The formula worked out may be stated thus: The secret of maximum economy in new house construction is to be found in a single local management overhead for the warehousing, sale, delivery, construction, and servicing of the end product.

5. Continuing research into cost reduction by several trade committees and associations.

6. Industry educational programs, including the establishment in some thirty universities of four-year courses leading to degrees of Bachelor of Science in Light Construction Engineering and Marketing.

7. Co-ordinated efforts to increase the number of apprentices being trained in the masonry trade.

8. An attempt to write a suggested housing bill (at least in principle) for the incoming Congress.

Changes involving deviations from traditional procedures that have been introduced in an effort to make distribution more efficient are:

1. Development of a philosophy of integrated merchandising. This leads to the horizontal and vertical co-ordination of all factors and functions between the factory and the point of ultimate consumption.

2. Mass production of homes through on-site fabrication by such organizations as Leavitt on Long Island, Burns in Los Angeles, and Bohannon in San Francisco.

3. The industrialized house or factory-built home being produced by Gunnison, Lustron, and National Homes, to mention but three.

4. The development of shell houses and build-it-yourself programs. Under this plan the consumer builds for himself or has built a weather-tight shelter consisting of foundation, walls, and roof, and does the

balance at his convenience. Packaged plumbing, heating, and wiring units for such houses are provided by the mail-order houses.

5. Life insurance companies are entering the housing field in increasing numbers with projects that usually short cut normal distribution overheads.

6. Expansion of public housing built by the government. As many as 100,000 units a year are projected by public housing advocates.

7. Development of government yield insurance as a device to encourage the construction of large numbers of new rental units by private enterprisers.

In the light of these developments, it is likely that marketing in the light construction industry during coming years will be marked by:

1. More aggressive selling by producers, wholesalers, and retailers.
2. Increased acceptance by manufacturers and distributors of their obligation to integrate the marketing of light construction packages.
3. Mergers and amalgamations of local distributing factors with duplicating management overheads.
4. The development of new marketing factors to implement the formula for maximum economy in home building already stated.
5. Increased government encroachments on the private housing industry.

MARKET OUTLOOK FOR MACHINES AND EQUIPMENT

By WALTER F. CROWDER
McGraw-Hill Publishing Company

Expenditures of business for plant and equipment in 1948 have been about 19 billion dollars. This figure compares with expenditures of 16.2 billions in 1947 and is at an all-time high. Expenditures for machinery and equipment are estimated to account for about 70 per cent of the total outlays.

There is a good deal of difference among individual industries as to how far they have progressed in carrying out their plans for postwar development. Producers of plant and equipment also show a wide range of variation in their levels of activity. To take only one example, machine tool builders since the war have been in a relative depression, having dropped from peak sales of 1.3 billion dollars in 1942 to 300 million in 1947 and approximately 285 million in 1948. This scale of operations below statistically expected levels has been due to the existence of a large surplus of war-produced machine tools fully adaptable to peacetime production rather than to decreases in capital expenditures by business. Various factors suggest that a revival is at hand for this particular segment of the capital goods industries.

Political rather than economic considerations dominate the outlook for capital goods, since what is required and what is provided will depend largely upon the course of international relations and domestic governmental policies. Some factors that will play a large part in deciding whether the flow of funds for new plant and equipment will be maintained at its present rate of 19 billion dollars or more per year are:

1. The need—either in terms of national security or to better our standard of living—is not being met, despite the current record rate of production.

2. About 60 per cent of the 50 billion dollars devoted to capital goods since the war has come from plowed back profits. This makes the flow of funds for capital equipment precarious. Perhaps the political soothsayers can tell us what the new administration will do about profits.

3. The meagerness of the flow of new external risk capital is a third source of concern.

4. Our appalling apathy in the face of the crying need for an understanding of the importance to our way of life of an adequate flow of tools and equipment should perhaps be listed as another worry.

GENERAL SYNTHESIS

*By REAVIS COX
University of Pennsylvania*

Although the various fields assigned to the other speakers differ widely, their marketing methods are likely to be affected greatly by a number of large forces common to them all. At least three such forces can well be emphasized here.

First, there seems to be a growing interest in what we may call the channel approach to marketing. This approach departs from the tendency of marketing to emphasize, to the exclusion of all else, the problems enterprises must solve in selling their own products to their immediate customers. It recognizes that in an important sense marketing to be effective must concern itself with achieving the effective movement of goods from the beginnings of production to the completion of consumption.

The merchandise flow survey described by Mr. Cahen is an effort by the men's clothing industry to improve the effectiveness of management by working with the entire channel as a unit. Mr. Hood's description of what is being sought, and to some extent achieved, in building materials gives an even better illustration of the emergence of this point of view in business.

It would require much more research than I have been able to do to determine how far this channel approach has developed either in the thinking of businessmen or in the actual practice of marketing. The idea is an appealing one, and the pressures to put it into effect are very strong. One can hardly doubt that coming years will see many experiments of this sort and the consequent introduction of marketing procedures that will make marketing in the future different in many respects from what we have today.

Second, marketing probably will be greatly affected in coming years by the outcome of a hard struggle between businessmen who are impelled by the pressure of their responsibilities toward some degree of integrated merchandising and others, notably government officials, who are impelled to resist integration by fear of monopoly. To some extent this struggle will impede, even if it does not prevent, development of the channel approach already mentioned.

Mr. Galbraith touched on this problem when he pointed out the conflict between the desire for efficiency in marketing and a strong predilection for protecting the small man in his competition against the large. Mr. Hood's "secret of maximum economy" in housing calls for horizontal as well as vertical integration in some degree. It can be put into effect only insofar as shifts in the nature and structure of competition among agencies become acceptable to people and to government agencies who have a profound distrust of anything tending toward the establishment or extension of monopoly.

It is interesting to note that Mr. Cahen made no mention of the mergers (horizontal and vertical) that have taken place in textiles during the last decade. There is much controversy as to how important this merger movement has been and as to how permanent the changes are likely to be. There is no reason to doubt, however, that the organization of marketing in this industry has changed substantially. Textiles no longer provide so clear-cut an example as they once did of an industry broken into a larger number of highly specialized firms who are tied together into an industry by markets rather than by administration.

The Federal Trade Commission seems to be convinced that what it calls the merger movement, as illustrated in textiles, is widespread and ominous in its economic portent. It is expected to press vigorously for amendments to the Clayton Act that will prohibit mergers through acquisition of corporate assets.

Thirdly, problems analogous to those just discussed arise also in pricing. It is surprising that none of the speakers has touched upon the important decisions taken in the last two or three years by the federal courts and the Federal Trade Commission in the matter of pricing. Yet

we cannot doubt that these decisions represent a third set of forces that will be fully as important for marketing as those I have discussed under the terms channel marketing and integration.

This is not the place to add another to the many exultant, anguished, and dispassionate discussions of federal control over pricing the journals have been publishing. The various official utterances are confusing and to some extent contradictory. It is not altogether clear what has been finally and definitively prohibited (other than collusive pricing), what has been ruled out for the time being by obiter dicta, what has been rendered suspect by the "overtones of hostility" Justice Jackson finds in some of the courts' decisions, and what has been rendered merely uncertain by its dependence upon the current attitudes of the Federal Trade Commission and the courts.

These matters doubtless will be cleared up in time; but a real decision can be reached only through settlement of the much larger problem of working out a new balance between governmental and private action in pricing. Here again we get into problems whose scope lies far beyond the possibilities of discussion here today. All we can say is that choices of fundamental import are to be made and that the nature of these choices will have far-reaching influences upon the sorts of things our speakers have discussed and specifically upon what sorts of leeway are to be given the business community in solving the problems thrust upon it.

Beyond these three large forces, many developments of considerable significance for the future of marketing could be brought up for discussion if there were time. Since time is lacking I shall mention only four: (1) the expanding application of marketing research to the problem of achieving greater efficiency in marketing, despite Mr. Galbraith's doubts concerning its effectiveness; (2) the great internal migration of people within the United States during recent years; (3) a wartime change in the relations between consumer income and consumer expenditures that may carry over in part into peacetime; (4) evidence that in many particulars continuity rather than change is the conspicuous characteristic of marketing, prewar and postwar. Such continuity is to be found in the reappearance of discount houses and other "irregular" distributors of durables, the apparent re-establishment of prewar seasonal patterns in the sale of some appliances, and a rapid recovery in the number of retailers following the setback caused by the war.

ROUND TABLE ON TRANSPORTATION AND PUBLIC UTILITY PROBLEMS

RALPH L. DEWEY, *Chairman*

At the morning session, which was concerned with transportation problems, papers were read by James C. Nelson, Washington State College, on the subject, "Patterns of Competition and Monopoly in Present-day Transport and Implications for Public Policy," and by Ernest W. Williams, Jr., Columbia University, on "The Maintenance of Adequate Rail Rate Levels in the Future." Professor Nelson's paper was discussed by Kent T. Healy, Yale University, and W. H. S. Stevens, Interstate Commerce Commission. Professor Williams' paper was discussed by Truman C. Bigham, University of Florida, and William H. Thompson, Iowa State College.

The afternoon session was devoted to public utility problems, with papers by William M. Duffus, Ohio State University, on "The Place of the Government Corporation in the Public Utility Industries," and by Ralph E. Badger, Ralph E. Badger Associates, on the "The Rate of Return." Professor Duffus' paper was discussed by Paul J. Raver, Bonneville Power Administration, and Mr. Badger's paper by Clyde O. Ruggles, Harvard University.

James C. Nelson stated that the past emphasis on high fixed costs and monopoly as the important factors in the field of railroad economics is no longer warranted. He said that the current public policy of restricting entry into service and operations by transportation companies has raised doubts about the efficient and economical functioning of the system. Favorable factors cited in the present market situation are the strength of the competitive forces released by the newer techniques of transport, the relatively large numbers in each new transport industry, and unfettered private transportation. Professor Nelson concluded that where the present combination of competitive, monopolistic, and regulative influences in transport markets will eventually lead cannot be foretold.

Kent T. Healy agreed in general with Professor Nelson's position and stated that recent analysis in terms of oligopoly seems more valid than the older monopoly analysis by placing emphasis on such problems as the nature of price leadership, the action of low-cost firms vis-à-vis their high-cost competitors, and the influence of rate associations on price decisions.

W. H. S. Stevens found little to criticize in Professor Nelson's patterns of competition and monopoly but was in doubt about the implications to be drawn therefrom. Dr. Stevens stated that if the author

meant to imply that more rather than less competition in transportation is desirable, the result might well be further regulation of public and even private carriers, if the latter were necessary or appropriate to preserve public carriage of any one or all modes of transportation.

Ernest W. Williams, Jr., noted the financial crisis of the railroads and their efforts to secure the approval of the Interstate Commerce Commission for an increase in their freight rates of an average of about 13 per cent. He said that this method may not furnish a satisfactory solution of the problem and referred to the tendency of past increases in rates to divert freight traffic to other types of transportation. A permanent solution is to be found instead in a program representing a complicated whole, including substantial reconstruction and re-equipment of the railroad system, improvement in the terminal situation, further consolidation of lines, and adjustment of rate divisions.

Truman C. Bigham said that railroad revenue cases should be approached from the standpoint of inherent advantage or relative economy and fitness. This means, as already recognized by some of the leading companies, that the railroads should not attempt to raise funds for the financing of services more economically provided by other modes of transport. New investment in railroad plant to be utilized under out-of-pocket rates means economic waste, although Professor Williams seems to advocate, perhaps unconsciously, a vigorous grasp for traffic at cut rates irrespective of whether the added plant falls within or without the appropriate rail sphere. It is probable that the railroads cannot earn a reasonable return during normal times on the entire investment now utilized, even if the Commission were to approve all requests for increased rates; but if they concentrate on the traffic which they are best fitted to handle and make the necessary readjustments, they should be able in the long run to maintain a strong credit position except where lines are unusually weak. Preservation of the inherent advantages of the railroads as well as other means of transportation involves much more than horizontal changes in rates. Professor Bigham stated that among the essentials of the necessarily broad attack upon the problem are: a rational subsidy policy, caution in granting certificates, regulation of minimum charges, a liberal abandonment procedure, prompt adjustment of rate relationships, state-federal co-operation, and continued research. Not to be forgotten are the responsibilities of management.

William H. Thompson analyzed proposals that more attention be given to demand elasticity in future rate changes. Referring to the *Ex Parte 162* proceedings, he questioned the soundness of a procedure which would result in a greater proportionate increase in future rates on commodities whose movement is relatively immune from competi-

tive diversion. In Professor Thompson's opinion, shippers of these commodities are at present paying in their rate levels for the accelerated loss of railroad freight traffic to other agencies and are being charged the full cost of emergency stand-by facilities for peacetime traffic and for maintenance of plant and equipment in the national defense program. He felt that this proposal, if followed, would result in unjustifiable discrimination, be economically unsound, and would tend to destroy the basic concept of rate reasonableness.

William M. Duffus defined the government corporation, traced its origin, and analyzed its characteristics. He discussed the circumstances under which government corporations are chosen as agencies for the administration of government-owned public utility enterprises rather than some noncorporate form of government agency. Problems raised for consideration included personnel selection and management and government control of the government corporation. Professor Duffus concluded that the government corporation should be an autonomous agency, accountable to government within a broad field of responsibility, but flexible, adaptable, and self-directed in its operations.

Ralph E. Badger considered the problem of over-all cost of capital for public utility enterprises. He suggested two methods for developing a logical capital structure. One method is to determine, by analyses and a study of comparative companies, what the absorption ratio should be for each class of security; the alternative method is to determine for a unit of \$100 of capital the amount to be assigned to bonds and to preferred stock, and then to apply to each of these specific units the cost rate determined for each class of capital. "In either case," said Mr. Badger, "final determination of what the capital structure of the company shall be for purposes of determining an over-all cost of capital will depend on judgment." He stated his preference for a relatively conservative capital structure, which he felt in the long run would better serve all parties concerned.

Clyde O. Ruggles said that three issues mentioned but not discussed by Mr. Badger in his paper deserve emphasis. First, there is the question of allowing some extra rate of return during boom periods to average out the depressed rate of return during depression. The second issue is that of allowing some increase in the rate of return when large amounts of capital must be raised in a short time, as has been true in the recent past. Third, there is the necessity of recognizing need for adjustment in the rate of return allowed whenever divergence between original cost and cost of reproduction becomes so great that injustice is done either to the public or to public utilities.

ROUND TABLE ON ECONOMIC RESEARCH

RESEARCH AS SEEN IN A SURVEY OF CONTEMPORARY ECONOMICS

By HOWARD S. ELLIS
University of California

Like the backward- and forward-looking faces of Janus, a survey of contemporary thinking in any department of science looks into the past to discover the main trends of conviction and into the future to discover their prospective importance and probable further evolution. Indeed, almost any practical or philosophical judgment as to significance and relevance involves so intimate an association of the yield of experience and its future usefulness that an attempt to separate the two would be completely stultifying. Let any careful reader of the volume with which I am presently concerned attempt to mark its chapters, paragraph by paragraph, for the points which summarize the *results* of the past decade of economic discussion, without implication as to what it pays to study from now on, and the points concerned with future *research* without assessment of recent analysis. I suggest that the designations be, respectively, R for results, and secondly R for research.

Nevertheless, the profitable lines of further work may be explicit or implicit in varying degree with different writers; and hence I have asked the contributors to the *Survey* to make their own ideas explicit, in order to avoid fallible inferences by other persons. In what follows I shall not attempt to label what has been put into print in the book and what comes from supplementary observations offered by the several authors. What is implied in the former and what is said in the latter are usually all of one piece.

For present purposes it seems to be profitable to array the subjects in three groups: those dealing primarily with *particular* price and market relations, those dealing with *aggregative* magnitudes in both their short- and long-run behavior, and thirdly those dealing with special aspects of the economy which do not lend themselves gracefully to the foregoing twofold division. This is a rough division, of course, and any categoric contrast would certainly have a negative value. As the present survey of a survey proceeds, let the auditor regard indulgently the "touch and go" treatment of large fields of economic enquiry—unless, of course, he is prepared to sit still for several hours.

We turn first to the closely interrelated subjects of Value and Distribution, Price Policy, and Monopoly and the Concentration of Power. Professor Haley stresses the need for greater theoretical refinement of

the theory of the individual firm in general—an influence fairly clearly exercised by Kaldor and Joan Robinson—and of the theory of oligopoly in particular. For all firms Haley suggests intensive study of the typical multiproduct situation and of the elements involved in entrepreneurial decisions as to price and output. What concepts of cost are relevant; does marginal revenue enter explicitly; what other variables beside costs and revenues enter into the calculus of management as to output and price? How much account needs to be taken of other motives than profit maximizing? What length have the periods basic to expectations and maximizing plans; and are there real counterparts to the theoretical ideas of flexibility, divisibility, and adaptability of plant?

No doubt most of these problems are involved for any oligopoly situation, but additional ones appear. Of all the multiplicity of possible reactions by one oligopolist to another, we should be able to discover some probabilities and narrow down the range of models. Professor Haley also suggests exploring further the "theory-of-games approach" for oligopoly and bilateral monopoly cases. Location theory could be advanced by greater emphasis on the price and output policies of oligopoly; and differentiation of product in general (other than location) requires further elaboration when firms are few. Many of these points are also stressed by Bain, Galbraith, or others, but all agree upon the fact that oligopoly cannot stop at the particular equilibrium level, even if "particular" includes all firms in a particular oligopoly.

The much neglected field of distribution importunately needs a general theory, Haley believes, particularly as to their relative shares (in the Ricardian sense, I suppose). Kalecki, he believes, has made a promising beginning along with Keynes, Tarshis, Dunlop, and others. But we need to know more about elasticity of substitution of factors, and about the effects of invention on distributive shares. Paralleling his emphasis in the price field generally, Haley stresses the necessity of analysis of firm or entrepreneur motives in the demand for labor and, on the supply side, the motives of trade-union tactics. Interest theory requires more study of the liquidity preference schedule and its elasticities at high and low rates, and the structure of interest rates over short and long periods. The latter assumes importance in Villard's discussion of monetary management.

To return, however, to commodity markets, we find that Professor Bain would welcome further statistical studies of demand and costs to the firm. In common with Haley he feels skeptical of the adequacy of present data and techniques to reveal true theoretical demand functions; and this lack in turn has a crippling effect—at the same quantitative level—upon the use of cost functions in explaining price policies. In and of itself cost analysis would be advanced through studies of the

relation of cost to scale in a number of industries. Paralleling a suggestion of Reynolds, Bain suggests a new emphasis upon engineering *ex ante* calculations of costs, and he would renew the old quest for a rational articulation of accounting and theoretical concepts of production costs. Progressing from firms to industries, he believes that a detailed comparison of the outstanding industry studies of the past decade would be in order. New and additional industry studies, particularly of intensive character, are needed: the mere amassing of brief, synoptic studies does little toward advancing scientific generalization.

Indeed the price analyst will have an endless task, because of the ceaselessly changing organization of production, if he undertakes a satisfactorily thorough study of every industry. The hope seems to lie, once "industry" is successfully defined, in establishing significant industry *groups*, and in describing the market structures of each group. From this procedure demonstrable relations between the market structures, competitive or noncompetitive behavior, and prices may emerge—generalizations which would supplant or supplement our present theories of price. Interindustry relationships, including oligopolist industries, should be strongly emphasized and subjected to further research by econometric techniques.

Galbraith shares with Bain the conviction that oligopolistic behavior must be studied upon the basis of such markets *as a group* and not upon the basis of the individual firm. The shortcoming of imperfect competition theory during the past fifteen years has been its preoccupation with the single firm in a setting of large numbers, held over from the Marshallian approach. To begin with, the infinitely numerous motivations of the individual producer are quite bootless. The point of departure should be the behavior of different types of oligopolistic markets under changing conditions of demand, as carried on, for example, by Means in the thirties. Aside from this central direction of price research, Galbraith adds that the role of price rigidity in economic fluctuations is still a moot issue of prime importance. Wartime experience with individual industries' price and production behavior has been exploited as yet to only a very limited extent. "The relation of differential price behavior to the cycle or, more broadly, to the level and stability of resource employment, is clearly unfinished business." Thus Galbraith adds his voice to the growing demand that the classical problem of the allocation of factors be recognized as intimately connected with the problem of output as a whole.

In concluding with the group of three essays devoted to particular price and market behaviors, I will not attempt to summarize further. In passing I have commented upon some common convictions as to the future character of research into value and price. Quite opposite con-

victions exist, however, as to whether the motives and calculus of the individual entrepreneur are fertile subject matter for research, in contrast with a more behavioristic or external-evidence analysis. Undoubtedly these opposed convictions will be reflected in future research along both lines, and the eating will have to prove the puddings.

A second group of contributions to the *Survey* has its central interest in measurement, explanation, and public policy relating to prices, production, and employment in the economy as a whole. These subjects include National Income Analysis, Employment Theory and Business Cycles, Monetary Theory, Dynamic Process Analysis, and Econometrics.¹

Professor Shoup believes that "the national income specialist and the student of economic theory need to be drawn together more, and to take more interest in each other's problems." This applies to several basic concepts, such as productivity, gross national product with especial attention to the meaning of government components, the distinction between input and output, and the meaning of factor payments. In addition he suggests further scrutiny of national income figures in the context of cyclical depression: comparing consumption and investment as employment stimulators may be misleading if investment is in gross terms. To understand the disposition of incomes made by consumers we need to have available their individual wealth positions, but these figures are almost completely lacking. International comparisons of national income involve unresolved problems in the composition of the totals and the roles played by domestic index numbers and by rates of exchange.

Recurring again to basic concepts, Shoup believes that the meaning of gross national product cannot be clarified until more light is shed upon the government sector. What are the merits of the Department of Commerce exclusion of government interest payments? Should we not give further consideration to the German and Swedish practice of distinguishing government outlays upon final and upon intermediate products, counting only the former in national income? What is the significance for national income theory and economic theory of taxation and free government services, in discussions of factor rewards and income distribution? Can the income analyst steer around the vexed question of the incidence of taxation?

The appetite for further statistical data and quantitative research

¹It would, of course, be possible to include fiscal policy under this heading, but Professor Smithies (in common with the present writer) would underscore a plurality of co-ordinate aims. Monetary theory, on the other hand, can be assigned to the "general equilibrium" group without much qualification.

The present summary has unfortunately to omit the penultimate subject mentioned above because of Professor Samuelson's absence from this country. I cannot venture upon the theme myself.

on the part of the student of variations in output is voracious. Professor Fellner offers so many suggestions, within and supplementing his essay, that I present them in highly condensed form under two general headings which follow.

A. *Determinants of GNP Constituents and the Relationships between Them.*

1. *Investment.*

- a) Further development and refinement of quarterly private investment-plan surveys, as started by Department of Commerce (*Survey of Current Business*).
- b) Study of relationships between inventories and output (in the aggregate and in specific fields).
- c) Relationships between total capital stock and output (in the aggregate and in specific fields).
- d) Effect of alternative credit policies on investment.

2. *Income and Consumption.*

- a) Effect of changing expectations on income-consumption relationships (implying further development and refinement of sampling and questionnaire methods with respect to expectations).
- b) Effect of cyclical changes on income-consumption relationships.
- c) Effect of changes in liquid assets and of changes in total assets (including nonliquid assets) on income-consumption relationships.
- d) Meaning and stability of alternative velocity concepts (liquidity ratios).

3. *Savings, Positive and Negative.*

- a) Separate inquiry into determinants of dissavings, which are presumably not identical with those of savings out of income.
- b) Corporate savings, their relationship to GNP and its constituents.

4. *Taxes.*

- a) Analysis of alternative loss-deduction (carry-over) proposals in taxation. Effect on investment activity, on the one hand, and tax revenues on the other.
- b) Problems arising in connection with possible substitution of personal taxes for corporate taxes.

5. *Prices, Factor Returns, and Output.*

- a) Effect of relative price changes on total output and its composition.

- b) Relationships between degree of competition and changes in output (also price changes) in different industries.
- c) Relationship between profits and aggregate income (value added), in the aggregate and in specific industries.
- d) Effect of money wage changes on real wage changes, and of real wage changes on output.
- e) Relationships between changes in real wage rates and productivity.
- f) Relationships between personal and functional distribution and changes in output and its constituents.

B. *Secular Change and "Business Cycles."*

1. Rates of secular growth; retardation and acceleration of logarithmic and arithmetic growth-rate in various activities and, if possible, in different countries.
2. Relationship between these growth rates and certain "basic" underlying factors (resources, including population and technology). Interaction between secular growth rates and cyclical fluctuations.
3. Effect of population growth on long-run income-consumption relationships (involving a comparison of per capita consumption functions with consumption functions applying to the economy as a whole).
4. Use of the National Bureau "cycles" materials for an analysis of the usefulness of certain broad hypotheses in business cycle theory (Acceleration Principle; the development of general contraction from partial overproduction plus immobility; genuine over-all demand-deficiency other than that developing from partial overproduction, that is to say "underconsumption"; cumulative processes, etc.).
5. The relationship of building cycles to population movements, to replacement waves, to the cobweb problem, etc. The relationship of building cycles to general business activity.
6. The problem of replacement waves in various durable goods industries (including durable and semidurable consumer goods).
7. Differences between the characteristics of business cycles in different phases of "long waves."
8. Detailed analysis of federal, state, and local public works in order to find out which of these are capable of being speeded up significantly in the event of business recession and slowed down significantly in inflationary periods.
9. Analysis of the methods by which certain tax rates could be made cyclically flexible (without undue loss of time).

In proposing three major research programs in the field of monetary analysis, Professor Villard pleads for concentration upon policy "at least until we can be sure that we have got our system working well enough so that it will be with us for a while." He believes that with relatively fewer economists than we have, England and Sweden have been more successful in economic management because economists have been more effective in bringing their knowledge to bear on current problems.

Villard's first program would study the flow of investment funds into durable goods, focusing attention upon the points at which the flow can be held back. He adverts to the fact that in 1929 one half of gross capital formation lay in fields not subject to the calculation of marginal productivity: consumers' durables, residential real estate, government capital formation, etc. What determines decisions in these segments of net investment? For example, how closely does income influence the purchase of consumers' durables? Villard is also concerned with influences at work upon the investment of depreciation allowances, and upon the maintenance of investment where, as in residential real estate, depreciation allowances may not be regularly provided. The flow-of-funds approach, which Villard characterizes as a reaction from Keynes, would provide the integrating principle in this study of investment decisions.²

Another general program of research would consider monetary and fiscal policy during prosperity or inflation. Villard asks whether in this setting additional savings resulting from a "voluntary decline" in the propensity to consume would be as deflationary as an equal amount of forced saving through taxation and debt retirement. He also enquires whether the inflationary pressure arising not through an increase of the quantity of money but through velocity would not have a greater impact on consumption than upon investment. Both these questions seem to me legitimate, each in itself; but the probable affirmative answer to the second—that inflation through velocity does disproportionately increase consumption—seems to rule out any especial concern with a "voluntary decline" in the propensity to consume in the same situation. But I would heartily agree with Villard that a monetary analysis of the past two or three years should be "uninfluenced by the implicit assumption that money used to retire debt goes into idle balances because during depressions money borrowed could be taken as coming from such balances."

The third proposal is a broad enquiry into the efficacy of fiscal-

² Attention might be called to Ruth P. Mack's monograph, *The Flow of Business Funds and Consumer Purchasing Power* (Columbia University Press, 1941), and to M. A. Copeland's current investigations for the National Bureau of Economic Research.

monetary control devices "in the face of our present national debt." Can any policies be devised for effective control if interest rates continue to be stabilized? Villard is quite skeptical about the affirmative answer given in official quarters. I would like to direct attention to the fact that the volume of bank loans is probably not uniquely correlated with interest rates because of the familiar "unsatisfied fringe" of borrowers. It is certain that the question should be thrashed out in print.

Professor Leontief has chosen, in order to supplement the future study implied in the *Survey* article on Econometrics, to present an outline of the Harvard University project on the "Structure of the American Economy." Even his outline extends over twenty-four pages, and a very sketchy abridgment will unfortunately have to suffice here. The project contemplates four basic studies, delineating the structure of our economy at a given point of time but analyzing its development through time on the basis of given technology, population, and consumption patterns. The second set of studies will be concerned with changes in the structure of the economy over time. While the project is directly devoted to the long run, its authors believe that cyclical variations require precisely this background for adequate understanding.

The basic studies rest fundamentally upon Leontief's *tableau économique* of the American economy, but it will be further refined and extended to a postwar year; as before, its function is to show the effect produced by a change in demand or localized structural change upon outputs in all segments of production. On the basis of this *tableau* a portrayal of capital-output relations throughout the economy will be elaborated. Beginning from calculations of the plant and equipment necessary to produce one unit of output in each industry, the analysis will show how an increase of required output from certain industries will affect the capital producing industries and by what alternative technological routes the necessary expansion can be achieved over time. Thus "the previous development of the system is included as one of the determinants of its present capacity and possibilities of growth." The next basic study deals with estimates of household expenditures on various groups of commodities defined by complementarity, substitution, etc., and the variation of such expenditures traceable to income, relative prices, and family composition. This study will draw upon the Harvard Department of Social Relations; it is intended to show, amongst other things, the impact of new consumer commodities. Two other studies, devoted to income distribution and to relative prices, complete the theoretical and statistical foundation.

Upon this basis are erected the special studies of structural change. One projected part will analyze the processes of technological develop-

ment. As an extension of productivity-measurement techniques, it will attempt to measure the rate of technical progress in the past and to isolate movements along a labor productivity curve through capital accumulation from changes in the production function itself. Furthermore it proposes to show how technical developments are spread—whether by new or old firms, how affected by competition, and how related to short-term economic fluctuations. This study obviously bears directly upon the next, devoted to the incentives to invest. Major parts of this effort will go to a historical survey of investment in certain industrial groups and the investment patterns of individual firms. Taking as a point of departure the maintenance of existing capital stock, the amount of new investment implied by changes in the total number of gainfully employed or in composition of national output or in composition of labor supply should reveal long-run capital utilization amongst different industries. Short-run analysis, assuming a weak relation between investment and output for the short period, should reveal the effects of price and profit relationships and technological change. The further special studies of structural change include an examination of changes in market structures, a survey of natural resources, and a number of special industry studies oriented to the general framework.

I proceed now to the remaining subjects included in the *Survey* which view the economic process from other angles than relative price behavior and the variation of inclusive aggregates. Labor Economics is, of course, a major part of both of these large subjects; but the permeation of welfare considerations and of sociological and political factors makes it—not inappropriately—*sui generis*. Professor Reynolds offers a wide range of research possibilities, making use of five general headings. In the first place he taxes labor economists with slighting the moving forces and effects of collective bargaining from the side of management. The central financial calculus of the firm should be closely analyzed to discover what forces set the upper limits to wages from the employer's viewpoint. What are the effects of given wage increases upon per unit costs of production for particular firms and how do wages affect output, employment, prices, and methods of production? Aside from the wage problem, how does unionization impinge upon the administrative apparatus of a firm and the relationship between workers and various levels of management?

Professor Reynolds proposes an extensive enquiry into wages under collective bargaining, organized under three dimensions of the problem: the internal wage structure of an industry, wages in the local area, and wage differentials in a single plant. With respect to the industry, an alleged objective of unionism is to establish standard

rates everywhere; but we do not know how far this has actually followed. The most promising field of investigation would be the newly unionized mass-production industries such as steel, textiles, rubber, automobiles, and meat packing. The local area study of wages under collective bargaining should be based upon a historical analysis extending over the past two decades. It would try to find out how far the unionized plants conform to the general pattern of wage changes in their respective industries, how far nonunion plants follow the lead of unionized plants, and how far employers are guided by industry-wide as opposed to local wage patterns. It is surprising how little attention has thus far been devoted to these questions. At the third stage, the enquiry would move to the single plant. Economists have paid scant attention to the elaborate job classifications of larger plants, leaving the problem to the industrial engineers. But economists should know whether wage differentials are the chief inducement to work in a given job and to seek for advancement in the scale. What role does the union play in the establishment of such scales and do these scales interfere with the principles which the management would itself adopt?

Local labor markets, including all significant segments, ought to be studied intensively, cutting across some of the questions already proposed and covering a wide variety of others, especially with regard to labor mobility. "To what extent is a youngster's eventual occupational level influenced by native abilities and to what extent by family circumstances and access to educational opportunities?" How is mobility affected by worker attitudes, by hiring policies, by union rules, and by employment services.

Finally Professor Reynolds proposes research into the two related fields of the bases of industrial peace and public policy toward disputes in key industries. Why are some industries much more peaceful than others; does "peace" bode ill to the public by reason of a presumption of collusion; do industries grow more settled in their labor relations with age? The key-industry study would examine what has happened under the Railway Labor Act, the Taft-Hartley Act, and under compulsory arbitration as in Australia. Case studies of government intervention would be an essential part, as, for example, the bituminous coal crisis of 1946, the railroad strike of 1946, and the threatened rail tie-up of 1948.

In the field of International Trade, Professor Metzler contents himself with fewer questions, but they are no less provocative. Suppose, he says, that the current tide of feeling for the values of full employment results in fairly effective income stabilization. "Fluctuations of

demand arising from movements of income will be relatively small, and resources will be largely employed, as postulated by the classical theory of the balance of payments. . . . We have thus reached the somewhat paradoxical result that the more successful Keynesian remedies prove to be in solving problems of domestic stability, the less need we shall have for Keynesian economics in describing international affairs." For, in place of the income-adjustment method of achieving balance in the international accounts, we would expect the price-system adjustments to be primary; i.e., movements of domestic prices and exchange rates. But if prices continue to be characterized by their present—and possibly even increased—rigidity, exchange rate adjustment would survive as the only equilibrating factor aside from direct controls.

This raises profound theoretical and practical problems. If reliance is placed upon exchange rates, the question of elasticities of supply and demand immediately presents itself, where much further statistical and theoretical analysis is nowadays required. Secondly—and here I add somewhat to Metzler's own statement—the International Monetary Fund is erected upon the basis of exchange rate revisions only at infrequent intervals, whereas a full employment world with inflexible prices would require practically free exchanges, aside from direct trade controls. What is going to "give"? Does not full employment achieved under a system of rigid prices almost inevitably imply the sacrifice of the last island of price adjustment in the exchange rates and the outright control of international trade? The question would seem to be worth some thought.

Metzler offers the very interesting suggestion that research effort be directed to the construction of an input-output table of the Leontief variety for the world economy, embodying each country's exports, imports, and national income, and showing the import propensity of each for the products of all other countries. For this purpose the trade statistics are available; but national balances-of-payments on current account are not widely available; and national income statistics are partly incomparable and in some cases lacking. Such a table would, however, prove a powerful analytical device in the study of the international spread of economic fluctuations.

Finally we come to two fields concerned with the appraisal of entire economic systems: Socialist Economics, and the Prospects for Capitalism. Under the heading of Socialist Economics, Professor Bergson suggests that research would fall into the following three categories: (1) welfare economics, or the analysis of optimum conditions and how closely they are approached under capitalism; (2) socialist plan-

ning, or socialist models designed to realize optimum conditions; and (3) applied socialist economics, or how socialist systems actually operate, with especial emphasis on the U.S.S.R.

Professor Bergson describes several promising lines of research on the Soviet economy as follows:

- I. Statistical studies: production series and production indices, price level and cost of living, real wages, national income (totals and breakdowns by allocation, etc.); international comparisons.
- II. The Soviet economy in 1970: investigation of the range of likely possibilities under alternative assumptions; foreign trade prospects and question of integration of Eastern Europe with Soviet economy.
- III. Foreign economic relations: including commodity, country, and area studies.
- IV. Economics of Soviet planning: policies, principles, procedures and administrative organization; effectiveness; Soviet economic thought.
- V. Economics of particular industries: iron and steel, coal, etc.
- VI. Economics of Soviet industrialization; Soviet versus capitalist industrialization patterns and the industrialization of backward areas.
- VII. Question of classes: inequality of income, the army and party as social classes, selection of leaders, ideological developments (in literature, theoretic writings).

There are two main lines of research which Professor Wright strongly emphasizes in his essay on the Prospects for Capitalism, and which he has elaborated in the following statement which I quote in its entirety.

(1) *Technical Economic Subjects*

One of the most important fields of research pertains to the circumstances under which the propensity to consume would "spontaneously" rise. Dr. Duesenberry has made certain approaches to the problem econometrically, but we need a study, not of results, but of the *forces* which induce them. What is the relation to increases in the quantity of money? to changes in "optimism"? etc., etc.

Another point which needs explicit development is the meaning of an investment outlet. In spite of all that has been said to the contrary, writers like Klein and Dillard and, to a less dogmatic degree, Tarshis and Samuelson, keep plugging the relationship between the stock of capital and its yield. One of the most unfortunate legacies of Keynesian thought is the notion that we only get investment when consumption is rising. I feel that there is a great need for more explicit formulation of this problem.

A third subject concerns the actual motivation of the entrepreneur. The very dubious notion that the entrepreneur will work merely for fun, or almost so, deserves reconsideration in the light of Professor Boulding's indifference curve analysis. It is important, I think, that investigations of this sort be conducted by relatively unbiased people, if any such exist. Two types of investigator in the field seem to me to be particularly likely to go wrong. First there is the young graduate student with no first-hand experience of business, who merely collates what Thorstein Veblen and other similar writers have written. Second there is the apologist for business who wishes to justify business by proving that businessmen are all really a bunch of noble-hearted people, motivated by

the instinct of workmanship. I should like to see a careful study made by someone who is a good economist, has some first-hand contact with business, and has not too much of an axe to grind.

(2) *Comparative Economic Systems*

The American Economic Association has no proper concern with the preservation of capitalism as such. It is, however, greatly concerned with the scientific study of the functioning of the economy. There is also (however illegitimate this may be from a purely scientific point of view) a natural concern on the part of many of the members with the future of democratic government.

The biggest single gap in modern economic thought, it seems to me, is the lack of appreciation of the non-capitalistic aspects of the economic problem. As a graduate student, I recall Professor Chamberlin asking us whether Economics would have any validity in a non-capitalist economy. It has been one of my prime concerns ever since to attempt to analyze capitalist problems in a non-capitalist setting.

One of the most dangerous ideas, not for capitalism, but for a successful socialism, is the idea that merely putting in comprehensive planning will avoid most of our present economic problems. It is dangerous to socialism because it means that the socialist government will be unprepared for possible dangers. We should, therefore, try to see how many of the evils of our present system inhere in it and how many are the results of social organization as such.

This requires a much more realistic and thorough psychological knowledge than economists now possess. Many people have a naive idea that abolishing money rewards will abolish the acquisitive instinct or the lust for power. I do not say that such instincts or lusts can never be abolished, but I do feel strongly that socialism or comprehensive planning, as such, will probably be found to have done not much more than change the objects concerning which men desire acquisition or power.

Another subject for investigation concerns the meaning of capitalism. It has somehow gotten identified in the mind of many people with the protection of vested interests, whereas the Economists have always advocated capitalism as a means of getting rid of vested interests. This subject ties in with the investigation of comparative social systems and the very doubtful idea that introducing socialism will abolish pressure groups.

The essence of my recommendation, therefore, is that whatever our political or ethical judgments may be, we should try increasingly to work out every problem in terms of alternative social systems.

In concluding, I shall not attempt the impossible task of summarizing a review of a survey. The rich array of research subjects suggested by contributors to the *Survey of Contemporary Economics* is bewildering, but exciting. There would seem to be little excuse for equilibrium with less than full employment amongst the economists themselves! But I must leave to other participants in the present round table the difficult task of dividing research programs between the categories of productive investment, on the one hand, and concealed unemployment, on the other.

RESEARCH IN PRICES, WAGES, AND PROFITS

By PAUL T. HOMAN
President's Council of Economic Advisers

I

I shall speak with special reference to the needs and research interests of the Council of Economic Advisers. In addition to its interest in independent research projects of many types, the Council has staff groups applying themselves particularly to four broad fields: (1) a tentative ten-year projection of the nation's economic budget; (2) a comprehensive collection and study of proposed stabilization devices for use in varying economic circumstances; (3) a study of the national requirements for capital formation; (4) a study of wage, price, and profit relations and policies.

Before taking up the last of these, which is my topic, I wish to mention two documents of interest in connection with the general topic of this round table. A list of fifteen areas of research of particular pertinence to the work of the Joint Committee on the Economic Report and the Council of Economic Advisers was presented by Senator Flanders in his testimony on Independent Offices Appropriation Bill for 1949.¹ The Joint Committee on the Economic Report has issued a committee print of its staff document, *Statistical Gaps*, which opens up numerous avenues to research. Bearing more immediately upon my own topic, the *Hearings* of the Joint Committee on prices and profits will, when published, also no doubt suggest a variety of fields open to useful research endeavor.

II

The Council's central interest in price and wage analysis is the contribution it can make to the formulation of principles, rules, or standards which will be applicable to progressive adjustments in supporting a state of economic stability. Its interest in profit studies runs over into the broad subject of capital formation with which Mr. Hoover is to deal. The first stage of the inquiry is to discover to what extent such standards can be usefully enunciated in a form which will permit them to be followed in actual practice. I shall not attempt to provide an answer to this question and will report only a tentative and qualified optimism with respect to the quest. I shall concern myself only with certain lines of research work bearing very directly upon the subject.

¹ *Hearings* before the Subcommittee of the Committee on Appropriations, U. S. Senate, 80th Congress, 2nd Session, p. 90.

III

Since I am appearing on relatively short notice in place of Professor Donald Wallace, who is unable to appear due to ill health, I shall first draw a number of points from a rather elaborate research memorandum which he prepared for the Council last summer. Among a considerably larger number of specific suggestions for further research were the following:

1. Broadly, a variety of productivity studies, together with such inferences as may be drawn from them for price and wage policy.

2. Improved measurements relating to productivity and cost reduction, and their reflection in prices, wages, profits, dividends, and capital formation. Ideally, this would call for annual statistics for individual industries (covering the same groups of firms and products) with respect to the following types of data: Man-hour output, hourly and weekly earnings, labor cost, materials cost, selling cost, prices, profits, dividends, capital expenditures, output, and employment. Similar data for each of the largest corporations would also be desirable.

3. A fresh examination of the period 1923-29 to appraise the character of the adjustments to increasing productivity during the period. This would center on analysis of the distribution of the gains, and bear upon such questions as whether larger wage increases or lower prices would have been a healthier development in terms of stability.

4. Careful statistical study of wages, prices, and profits in the period 1946-48, with analysis of the income, demand, and cost effects. Such a study would be designed to throw more light upon the economic consequences of the actual price and wage policies pursued by business and labor, the possible merits of alternative policies, and the bearing of these findings upon future policy.

The preceding points are simply outstanding samples within the broader range of analysis which Professor Wallace proposes.

IV

Almost all research which involves the use of existing statistical series on prices and wages runs into technical difficulty because of the shortcomings of these series for the purposes in hand. I shall mention only two of these technical problems.

1. There is a problem as to the reliability of the statistical series used to compute productivity. Commonly used are the BLS series on employment, the BLS series on hours, various price series, and national income data. As yet, the results which can be secured from the available data with respect to productivity changes in general and in various sectors of the economy leaves much to be desired.

2. Comparisons of relative wage and price movements, for example in declining markets, are likely to be seriously misleading, because of the different degrees of reliability of the data. On the whole, wage data are much less defective than price data, which fail adequately to record the changes in grades and qualities which accompany broad price movements.

Such weaknesses are not barriers to useful research, but they present serious problems and require special caution and intelligence in the interpretation of results. They also present a challenge for the improvement of the data.

V

I shall next present a short list of special problems which lend themselves to research attack.

1. The past course of wage movements in relation to productivity. A fruitful mode of attack is illustrated by Professor Dunlop's paper, "Productivity and the Wage Structure," in *Income, Employment and Public Policy: Essays in Honor of Alvin H. Hansen*.

2. The actual basis of business price policies. The staff of the Joint Committee has been active in stirring up work in this field by the method of field work tapping the thought and experience of the managements of particular companies. Professor Dunlop has proposed to the Council an approach to the matter through the study of break-even points and of conventional views of business management on the subject, as colored by their past experiences of business instability. The subject can also be approached from the angle of profit levels and considerations by which profit policies are related to investment programs, to labor relations, to public opinion, etc. All such projects are in one way or another related to the inquiry which was so widespread during the depression years on "price and production policies," degrees of price and output flexibility, and degree of monopoly power. They present new facets, however, in the context of a "full employment economy" as contrasted with the circumstances of the depression years.

3. Price and profit policies in relation to cost of production with new capital, as contrasted with costs related to old capital equipment. The rapid changes in capital costs present striking accounting problems and raise grave policy questions, not only for business, but also for the government insofar as the latter attempts to influence prices in the interest of stability.

4. Cost influences of irregular rates of production. I hope that Mr. Heflebower will elaborate on this subject in the later discussion, since his studies bring out the neglected fact that there is no simple relation between volume and cost.

Broken down into detail, the topics just listed, together with those attributed to Mr. Wallace at an earlier point, represent an almost boundless field of potential research projects. Many other problems or approaches to problems could be formulated.

VI

Economic research has its place and much of its justification apart from any specific use which is to be made of it. But, from the viewpoint of the Council of Economic Advisers, back of their desire to see research advanced in the price-wage-profit field lies a whole series of functions which they are charged to perform. And back of these functions lies a series of questions to which only very tentative answers are now available. Such questions as these:

1. Are there, or can there be devised, productivity criteria applicable to wage settlements?
2. On what evidence and by what criteria does a government agency determine that prices, wages, or profits are "too high" or "too low" and advise in what respects they should be adjusted?
3. What degrees of flexibility or rigidity, respectively, in the price and wage structure are to be desired and, possibly, promoted by government.
4. What would be the agenda for a labor-management-agriculture conference on principles of interrelationship and adjustment between wages, prices, and profits?

There are many more questions than these. But they illustrate sufficiently the difficult questions which are involved in an effort by government to influence the course of economic adjustments in the interests of stability. The role to be played by economic research—by individuals and by private and public agencies—is very great in the support of an effort to separate foolish questions from sensible ones and to provide the factual basis on which the Council can proceed with greater assurance.

RESEARCH IN THE AREA OF PRODUCTIVE CAPACITY AND INVESTMENT

By EDGAR M. HOOVER
Council of Economic Advisers

In order to avoid spreading too thinly over a large range of subject matter, I have chosen to restrict the scope of this paper by adopting a somewhat specialized viewpoint: that of the Council of Economic Advisers under the Employment Act of 1946. The views expressed are merely my own, but the research areas I shall point out are some which appear most important and most woefully blank in the light of experience so far in seeking to implement the Employment Act in respect to investment.

In the interest of still further limitation of the subject I am going to refer generally only to private investment in productive facilities, leaving aside such areas as public investment, housing, and working capital.

1. *Principal Research Objectives.* From the standpoint of implementation of the Employment Act there are four principal over-all objectives for research in the field of capacity and investment. In the first place we must have some more adequate *measures of past, current, and anticipated levels of investment*. Secondly, we must develop satisfactory measures of the direct *results* of past and current investment programs in terms of increases of productive capacity, increased efficiency of facilities or productivity of labor, and the effect of investment expenditure on total expenditure. Thirdly, we must have some way of *appraising current and prospective investment rates and patterns* in terms of desirable standards. Finally, we must understand the *effects of a variety of possible policy measures* upon the rate, stability, and pattern of investment if we are to recommend intelligently the application of such measures in the interests of the stability and growth of the economy.

Let us look at each of these four areas in turn, beginning with the measurement of investment activity.

2. *Measurement of Past, Current, and Anticipated Levels and Patterns of Investment.* There are two principal approaches to the statistical measurement of current investment in productive facilities. One approach is based on sales or shipments of producers' durable equipment, plus construction contracts. The other approach is to ask the investors themselves about their expenditures for plant and equipment. Each of these two approaches has certain advantages of its own; both should be continued and further developed. It is evident, however,

that we need further improvement of data in this field. At present neither approach yields investment estimates capable of being broken down by individual industries or types of equipment, save in a few areas. Improvement and greater detail are particularly needed in the fields of trade, services, and manufacturing. It would be especially desirable for purposes of analysis to have industry breakdowns comparable with those for which profits and sales data are available.

In order to make these series more accurate and more detailed a considerable volume of further research is needed. A part of the solution is simply the intensification of the sampling work of the agencies concerned (primarily Commerce and SEC) with improved samples, improved census benchmarks, larger coverage, and better reporting. There are in this connection many subjects on which the agencies concerned can benefit by having light thrown on certain questions of fact regarding the investment procedures of industries.

For the purpose of effectively framing and directing survey inquiries, we still do not know enough about how investment budgets are made in the typical firm, or whether there is such a thing as a typical firm in this regard. What officials initiate proposals for major plant and equipment outlays, and on what criteria? What other officials pass upon these proposals, and at what point and how are they related to the views of the sales and financial departments? How far in advance are such outlays contemplated, planned, approved, and contracted for? Would it be feasible to measure investment anticipations by questioning businessmen about their anticipated purchase commitments and not merely about anticipated outlays during coming months? How fully and frankly can we expect plans to be reported to a survey agency on a confidential but voluntary basis? How closely have reported investment anticipations in the past been borne out in terms of expenditures actually made? What are the major factors of bias and other discrepancy as between expected and realized investment?

All these questions are highly relevant to the possibilities of taking the pulse of business by investment surveys. Some research on most of the points mentioned has been initiated by the Department of Commerce and in a joint project of the University of Illinois and the National Opinion Research Center of the University of Chicago.

3. *Measurements of the Effects of Past and Current Investment.* We know that investment in productive facilities has the effect, generally, of increasing capacity, increasing productivity and efficiency, and contributing to total expenditure. But in each of these fields much constructive research is needed to acquaint us more adequately with the way in which past and current investment has reacted upon the economy.

The subject of productive capacity, for instance, is almost completely neglected by economists. A mere handful of trade association statisticians are engaged from time to time on compiling measures of capacity, and some of these measures leave much to be desired. There has been among economists, to be sure, a certain amount of theorizing about the shapes of cost curves and some speculation as to whether the least-cost point on such curves should be said to coincide with "capacity"; in other words, whether the average cost curve turns up abruptly from its minimum. There has, however, been regrettably little empirical study on this point other than Joel Dean's pioneer investigations. We need more empirical studies of cost functions in individual firms and industries in order to develop a more useful and precise concept of capacity in relation to price policies and the behavior of supply. We also need better empirical statistical methods for estimating current capacity and for building up time series of capacity and capacity utilization for past periods.

The subject of the contribution of investment spending to total expenditure calls for intensive studies of particular periods of past history such as those now being pursued for the twenties by Professor Gordon, of California. Such studies explore the role played by total investment at particular periods of time and identify the particular areas of industry which contributed most to the investment activity at those times.

4. *Development of Standards for Investment Rates and Patterns.* Once we know how much investment is going on and what it is accomplishing, it is in order to ask, "Is this good or bad?" At the present time, about twenty billion dollars a year are being spent on new plant and equipment. There is an uneasy feeling that such a level is too high to last very long, and that the rest of the economy must somehow adjust itself to a somewhat lower investment level. On the other hand, there is also concern whether the rate of investment in electric power, steel, and certain other types of facilities is too low.

Practical working standards must somehow be provided by which in any given situation we may judge whether the rate of investment is sustainable or is tending to undermine its own future. As yet we do not have adequate standards of this type.

Highly promising work is being done on the theory of sustainable growth rates, by Harrod, Samuelson, Domar, and Alexander, among others. The central theoretical problem has been to determine under what conditions (in terms of values and changes of the multiplier, accelerator, and efficiency of investment) the over-all growth of investment and output will tend to be steady rather than cyclical. This line of investigation may ultimately serve two purposes: (1) to discover

which relationships might be modified by institutional reforms so as to give investment a greater degree of built-in stability and (2) to develop measurement procedures to tell us in any given situation whether the rate of investment is sustainable. This would furnish guidance for the use of flexible (as distinct from built-in automatic) controls.

A working standard for judging current investment rates and patterns requires setting up at least a rough quantitative system of economic goals or guides for some future "normal" year. This means a model of a future stretch of time in which sustained high employment is postulated. In such a model the investment pattern and rate must bear a consistent relation to (1) capacity requirements for the output assumed in the model, (2) productivity increase, (3) investment incentives, and (4) intended saving. Each of these relationships may be briefly explored.

We need some better guides than we now have for translating production goals into investment requirements. How large a rate of investment in manufacturing facilities, for example, would be needed in the next ten years if in that time the Federal Reserve industrial production index were to rise from 195 to 240? How much investment in steel-making facilities would this call for?

The logical chain of connection follows back from a stated production goal to capacity requirements to a required stock of capital to a required investment rate. But so far as our actual knowledge goes, all the links are weak for lack of adequate research.

In the relation between *production* and *capacity* we need better knowledge of factors determining capacity utilization, in addition to the improved measures of capacity already discussed. What, for example, are normal or sustainable rates of capacity utilization in a given industry? Are they subject to increase or decrease over the long run or in the foreseeable future? How do they depend on the extent and character of technical or locational change in the industry, and how do they depend upon the policies of management and the character of competition? It is clear that case studies of individual industry situations are the key to better knowledge in this area.

Our knowledge of the relation between *investment* and *capacity* is still more unsatisfactory. Present statistical estimates of the stock of productive facilities are as yet not very useful in this connection. It is observable that the estimates of the stock of capital in industrial plant and equipment, for example, seem to bear no consistent historical relationship to capacity even when expressed in so-called "constant" dollars. In some periods the stock of capital as thus measured apparently increased faster than capacity and in others much slower. There

are at least three factors involved, which need to be individually subjected to further research.

a) The changing composition of the investment pattern and the production pattern, with a shifting emphasis upon industries using large amounts of capital per unit of output and those using small amounts of capital per unit of output. This in itself accounts for large changes in the over-all relation of capital to output, and points up the fact that research should be directed primarily to individual industries.

b) The introduction of technical processes requiring larger or smaller amounts of capital per unit of output. It may be that the observed tendency of industrial capacity to rise faster than the stock of fixed industrial capital in the past generation is to some extent traceable to capital-saving improvements.

c) The well-known fact that replacements of productive facilities do more than merely make good the capacity embodied in the capital goods replaced. Technical progress implies that new models of productive equipment are generally more efficient than the old ones they replace. One might express this in statistical terms by saying that the deflation of our series of gross capital formation and capital consumption uses equipment price indices which do not make adequate allowance for gains in efficiency. Conceivably such allowance might be made, which would increase the statistically indicated growth of stocks of productive facilities.

A closely related factor also deserving firsthand investigation is the enlargement of productive capacity by replacements and modifications of equipment which are charged to current expense.

In order to judge the feasibility of any projected rate of investment it is also important to know its relation to the increase of labor productivity. It is a commonly accepted generalization that the main factor in increased labor productivity is more and better tools. As already indicated above, this may mean either more capital per man or simply newer capital, depending partly on how we measure it. Further studies in individual industries should relate past investment activity to observed increases in the efficiency of utilization of both productive facilities and manpower. It would also be highly fruitful to try to project such studies into the future by way of estimating the probable effects on productivity of investments either now under way or contemplated.

5. *Research on Investment Incentives and Finance as a Guide to Public Policy.* I have already mentioned the importance of relating future projections of investment both to investment incentives and to the supply of investment funds. These two relations are also central

to the question of public policy. Policy measures designed to contribute to the stability and growth of the economy can influence investment either through profit expectations or through the supply of investment funds. Assuming that we know in a given situation how the level or direction of investment should be modified, we need far better knowledge than is now at hand concerning the probable effects of government action. This holds true even though the action may be motivated partly by purposes other than the influencing of investment behavior.

When one mentions investment incentives, the subject of taxes comes automatically to the fore. But precisely because the relation of taxes to investment is so amply appreciated in business and professional circles, I see no need to dwell upon it here. This is by no means intended to deprecate the importance of the subject as a research area. A large volume of research is going forward under both private and public auspices which it is hoped will make possible an improved weighing of the investment effects of alternative methods of revenue collection.

Since the question of investment incentives and responses involves economic motivation and behavior expressed through the mechanism of business institutions, it should offer a fertile field for the interview survey technique. An approach somewhat along the lines already developed in some consumer behavior studies can, I think, be usefully applied to measure and anticipate how business investment responds to incentives. An essential phase of this line of research is the improvement of our knowledge of the mechanism of investment decisions in the business enterprise.

The interplay of motives within an enterprise is still imperfectly understood. For example, we hear a great deal these days about the reluctance of corporations to "dilute equities" by issuing new stock at prices below the estimated reproduction cost of that amount of capacity represented by one share. The relative behavior of construction and equipment costs on the one hand and stock prices on the other has been such that this argument has been cited as applying to a large number of firms and even to whole industries such as steel. But it is not yet clear in whose interest the implied calculation of the pros and cons of issuing stock are made: the management, the stockholders as a whole, or those stockholders who pay income taxes at marginal rates higher than the capital gains tax rate. The nature of the calculation involved is also vague in the absence of a well-developed theory in this area. Here surely is a field in which contributions to our meager systematic knowledge would be valuable.

A still more crucial question on the working of investment incen-

tives is that of the relative influence of immediate and long-run profit expectations. Simple assumptions about the economic man tell us that investment in durable production facilities ought logically to be determined by some evaluation, in present terms, of a future probable stream of returns from the investment, and that these returns should be discounted both on account of waiting and on account of uncertainty. But there has been little research by way of systematic attempts to measure, for specific industries or types of investment, the respective relative importance of current, short-run, and long-run earnings and the influence of uncertainty. Some surprises may be in store for us when we explore this field more thoroughly. We may find that the institutionalization of business has progressed to the point where the investment behavior of corporations bears only a remote relation to that of the economic man. Even the little we now know suggests that the availability of past or current profits to reinvest rather than any nice calculation of the outlook may determine the effective limit on current investment outlays. But there are also indications that when such funds are available, they may be plowed back into forms of investment with very low apparent rates of return; that is, investments yielding returns so far into the future that they can be rationalized only in terms of the desire to perpetuate the corporation for succeeding generations.

From the standpoint of the growth and stability of the economy as a whole, it would seem desirable (1) that new investment should be geared to a secular rather than a cyclical view of expansion needs, and (2) that new investment be somehow allocated to the industries and firms where it will contribute most toward future output. The existing institutional practices need fuller examination in the light of these criteria. Case studies which relate investment experience to current profit positions and expectations would be valuable.

Many economists have deprecated the trend toward reinvestment of earnings, holding that these funds would be better allocated among industries, firms, and time periods if they were distributed and subjected to a competitive capital market mechanism before passing back into investment. But do we perhaps overrate the mysterious wisdom of the capital market? How good is its record? It would be illuminating to compare past investment market appraisals of the prospects of specific industries and firms with the subsequent outcomes.

A more specific aspect of this topic of investment behavior, which has been given attention by George Terborgh and others, is the question of equipment replacement policy. Available evidence seems to show that the buying of equipment for replacement (which accounts for the larger part of total equipment purchases) may be regulated

largely by tradition in the form of semiarbitrary pay-off period standards. Any tradition needs to be examined now and then, to see if it is perhaps out of date. More comprehensive information regarding replacement policies should be collected (if possible, checking questionnaire responses against actual pay-off and purchase experience), and prevailing policies judged in the light of rational standards. In this field of study it would also be important to know how the size and financial position of the firm is related to its replacement policies.

The subject of investment incentives is of course intimately bound up with that of the sources of funds. Earnings, which are presumably the ultimate incentive, furnish directly a major part of the new capital used by business and indirectly determine the terms on which outside capital is brought in.

Systematic statements showing the sources and uses of capital funds by corporations have been compiled for recent years, and the Department of Commerce is extending the series back into the past. These statements, however, represent a consolidation for corporate business as a whole. As rapidly as possible, similar analyses ought to be made for certain major industry groups. Controversy about the adequacy of profits, the role of the stock market in supplying new capital, and the debt/equity position of corporations all has some relevance "across the board," but vastly greater relevance in terms of particular industries. Standards for the relation between debt and equity, for example, are quite different as between public utilities and other industries, or as between cyclically stable and unstable industries. Again, the steel industry is often said to be in a peculiar financial position because of the imminent necessity of making large capital commitments to replace its depleted iron ore supply. The discrepancy between present allowable depreciation charges and replacement costs has much significance in some areas and little in others. And the relative importance of fixed capital and working capital expansion as uses of funds varies from one industry to another. All these issues concerning the sources of investment capital can be more constructively faced when we are in fuller possession of the facts in specific fields of business.

I come now to my last point. One over-all fact that seems reasonably clear in regard to the sources of funds is that business and social evolution have wrought some irreversible changes in the mechanism of private investment. The role of the wealthy, independent investor is diminished,* while the importance of business savings and indirect institutional investment of individual savings is increased. It is still uncertain whether direct public investment will need to play a more active part.

It would be most helpful to have a really adequate quantitative esti-

mate of the equity capital needs of important individual lines of business, with allowance for availability of retained earnings and the maintenance of reasonable debt/equity relationships. Such an estimate would give us at least an idea of the dimensions and incidence of any adjustment needed.

Constructive effort to meet the problems involved in this adjustment calls for intensive research into existing and potential new means by which the savings of the security-minded small saver can be made available for business investment without excessively burdening risky enterprises with debt. An important special aspect of the problem is the more effective use of genuine venture savings by revolving-fund organizations which specialize in the equity financing of young and risky industries and sell out to less venturesome parties when the pioneering stage is over, so as to move on to another new field. A broader issue, however, is that of the use of insurance companies and possibly new kinds of banks to supply more equity capital to business. In this connection should be mentioned the research project headed by Raymond Goldsmith, under the auspices of the life insurance companies' Joint Committee on Investment Research and the current work of Homer Jones for the Committee for Economic Development.

SUGGESTED LINES OF ECONOMIC RESEARCH NEEDED TO CARRY OUT OBJECTIVES OF THE EMPLOYMENT ACT

By G. W. ENSLEY

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At this round table, I would like to suggest some lines of economic research needed to carry out objectives of the Employment Act of 1946. These research needs will be discussed from the standpoint of the work of the Joint Committee on the Economic Report, and my remarks are directed particularly to nongovernment economists and private research groups.

It might be useful, however, to indicate briefly the function and procedure of the Joint Committee on the Economic Report. The Joint Committee, under the Employment Act, is charged with advising the Congress on economic policy. It has a function in the Congress which parallels that of the Council of Economic Advisers in the Executive Branch. The operations of both groups largely center around the preparation (the Council's function) and the consideration (the Committee's function) of the President's Economic Report. The President's report, as prescribed in the Employment Act, first of all, is to set forth an analysis of the present and foreseeable levels of economic activity. Secondly, it is to indicate the needs of the economy in order to achieve objectives of maximum employment, production, and purchasing power. Finally, the report is to review present federal economic programs and recommend changes in programs as a means for closing or narrowing the gap between present levels and needed levels of economic activity.

The procedures of both the Council and the Committee must be geared to providing the most comprehensive and enlightened advice to the President and the Congress with reference to matters contained in the President's Economic Report. In performing its function, the Committee must actively seek supplemental and independent information and assistance. The current activity of the Committee with reference to a study of corporation profits illustrates this procedure. The President's economic reports of the past year have referred to the size of business profits. This aspect of current economic activity, of course, has significant implications for economic stability and growth. The President may have recommendations for Congressional action next January. The Joint Committee must be prepared to advise the Congress on this matter. A subcommittee, therefore, has recently undertaken a study of the concept, size, and role of corporation profits.

At public hearings, testimony was received from economists, accountants, labor leaders, and managements of a number of corporations. These hearings, in the limited time available, developed a vast amount of significant information on the operations of the economy, economic needs, and effects of possible government programs. When this information is summarized and digested it will be made available to the several committees with jurisdiction over tax, credit, monopoly, labor, price, and like legislation. It should be noted that the Joint Committee is not a legislative committee; by that I mean, the Committee does not act on specific legislative bills. The materials gathered by the Joint Committee in this as in other instances, however, should indicate whether government action is desirable and the implications of possible government programs.

Without going further into the procedures of the Committee, it is evident that the Committee's activities of guidance to the Congress on economic matters should be assisted by economic research work of economists in universities and in private agencies.

I would like to transmit a number of lines of economic research which members of the Joint Committee would like to see undertaken. The list is intended to be suggestive and illustrative rather than exhaustive. While some of the projects could be undertaken only by a federal agency or with the closest government co-operation, many can be undertaken successfully by private individuals or groups.

The list is divided into three categories, paralleling the make-up of the President's Economic Report. The first category includes projects useful to an understanding of "the operation of the economy." While much research has taken place on the qualitative aspects of economic activity, there is a growing need for additional quantitative analysis.

The second category of lines of economic research useful to carrying out the objectives of the Employment Act includes projects appraising "the needs of the economy" with reference to the Employment Act's objectives of maximum employment, production, and purchasing power.

The third category of desirable research projects concerns an intensive appraisal of "economic programs," or the means for closing the gap between "what is" and "what ought to be."

These are only illustrative of the lines of economic research needed by the Joint Committee. I have appended to this paper a list of other suggested projects.

The Joint Committee is in a position to assist economic research by governmental and nongovernmental agencies. I might mention three methods already initiated by the Committee. First, the Committee can expedite legislation designed to improve and broaden the types

of statistical information¹ and to provide funds for governmental and nongovernmental economic research.

Secondly, the Committee, with the help of its small staff and in co-operation with the Executive Branch, is in a unique position to assemble and make available to research workers information gathered from hearings, questionnaires, and federal agencies. The Committee, for example, has made possible the public distribution of *Economic Indicators*, a monthly publication prepared by the Council of Economic Advisers showing current trends of prices, employment, production, purchasing power, and like data; it has published several volumes of hearings and reports offering much raw material to those interested in economic research.

Thirdly, the Committee can suggest rather specific lines of governmental and nongovernmental research needed to assist it and the Council of Economic Advisers in the co-ordination of federal economic policy. The Committee should make known areas where private research can assist in policy making. The following list may prove helpful in this respect.

*Lines of Economic Research Needed to Carry Out Objectives
of the Employment Act²*

The operation of the economy:

1. The measurement of productivity.
2. Seasonal unemployment in specific industries.
3. Changes in savings habits.
4. Sources of venture capital.
5. Changes in the attitudes of business management.
6. Effects of inflation on business enterprise.
7. Effects of inflation on fixed-income groups.
8. Speculation on commodities exchanges.

The needs of the economy:

9. Long-range investment needs.
10. Regional development needs and possibilities.
11. Profits in relation to capital formation.

Economic programs:

12. Economic philosophy of the independent regulatory agencies.
13. The effect of state and local fiscal policy upon economic stability.
14. State and federal laws restricting competition.
15. Programs for depressed areas.

¹ U. S. Congress, *Current Gaps in Our Statistical Knowledge*, a report of the Joint Committee on the Economic Report (Government Printing Office, 1948).

² Presented to the U. S. Senate Appropriations Committee by Senator Ralph E. Flanders, 1948, on behalf of the Joint Committee on the Economic Report.

1. *The Measurement of Productivity.* One of the areas of knowledge of most importance in the measurement of economic progress, in the setting of economic goals, in the consideration of the nation's economic budget both currently and for future years, and in the programming of economic policy is the area of productivity. While considerable research in the measurement of productivity changes in the past has been engaged in in both the government (mainly the Bureau of Labor Statistics) and in the private research agencies (mainly the National Industrial Conference Board and the National Bureau of Economic Research), the basic information on past changes is still spotty, being largely confined to manufacturing, agriculture, and some selected nonmanufacturing industries. Some major components of the economy, such as trade, service, the professions, and government, have been left relatively untouched. In addition, close attention to the causes in the changes in productivity has been particularly slight. This leaves us in a position where estimates of long-range, and particularly short-range, changes in productivity in the future are based on a very inadequate foundation. Economic policy based on these estimates is therefore resting on a weak foundation.

There is a vast amount of work to be done in these fields, and perhaps more particularly in the field of aggregate productivity changes for the whole economy in contrast to specific changes in minor segments. Furthermore, the work to be done is such that it can be broken into a number of segments for contracting out to particular research groups best fitted for the particular research. Briefly, the end result of such a series of projects would be to achieve full coverage of the economy in the measurement of productivity changes in the past; special attention to the measurement (or estimating) of recent productivity changes; and analysis of the causes of the changes in productivity to serve both as a basis for estimates of future changes and as a guide to economic policy designed to bring about an improvement in productivity with a resulting increase in the total output of goods and services of our economy.

2. *Seasonal Unemployment in Specific Industries.* More information should be secured relative to the extent to which seasonal industries cause serious unemployment. In some instances, it is known that small plants, seasonal in nature, cluster around large plants which are also affected by seasonality although at a different time of the year. The small plants are enabled to meet such labor demands through the practice of hiring workers temporarily laid off from the other concern. The extent of this practice should be ascertained if proper policies designed to maintain maximum employment are to be realistically developed.

In connection with this problem it is known that many part-time or seasonal workers are part-time workers by choice. More complete information on the extent to which this is true is necessary in connection with the effort to appraise the over-all importance of seasonal unemployment.

It is believed that valuable data on this problem could be secured if an intensive study were made in certain selected large labor-market areas. Such studies could well be carried out by the economic research staffs of universities located in the selected labor-market areas. These data would then be integrated with information now secured by the Census Bureau in its Monthly Report on the Labor Force.

3. *Changes in Savings Habits.* There has taken place a considerable change in the sources of individual savings over the decades. These changes are due to two main factors; namely, to changes in distribution of incomes and to changes in the attitude of individuals.

A study of these problems requires an analysis of the distribution of incomes, before and after taxes, by income brackets. We know that a large portion of savings originates in the middle-income brackets as compared with earlier decades, but much more precise information is needed.

Also the savings that still originate in the higher-income brackets are of a different character than those originating in the same brackets decades ago. There is some evidence that wealthy people are making more use of professional investment counselors and prefer seasoned investment outlets to new and risky ventures. A study of income tax returns and interviews with investment counselors and a sample of investors might yield interesting results. There is available a wealth of information through comparison of the composition of estates. (Material comparing the composition of probated estates in 1928 and 1938 has been collected but not tabulated because of the war. It may be worth while to utilize that material now and add to it samples of most recent estate data.)

Such a research project would fill a gap in our knowledge about the supply of savings which, in combination with an analysis of demand for savings (see research project No. 4), will reveal in detail a serious deficiency in our economic institutions.

4. *Sources of Venture Capital.* Present institutions of the capital market were developed at a time when a large part of the capital needed for new business development was provided by wealthy individuals. Under the influence of changes in the origins and the character of savings, insurance companies and other financial institutions have become the most important channels for the investment of savings. It is said that these institutions are not well equipped to serve the capital

needs of expanding business. Thus business depends, to a large extent, on investment of depreciation funds and retained earnings. This in turn puts well-established businesses in a much superior financial position to new ventures.

In this area we find many expressions of opinion but very little firm investigation. Improvement in our financial institutions in line with the character of the savings supply and the character of demand for capital is a prerequisite of sustained business expansion. A comprehensive investigation of the character indicated should provide the facts on which recommendations for such improvement can be based.

5. *Changes in the Attitudes of Business Management.* There are indications that during the present boom the attitude of business managers differs from the attitude in former boom periods (at least the attitude as described as typical behavior of business in books on the business cycle). Many of the economic forecasts by governmental and nongovernmental agencies are based on what is regarded as typical business behavior. This typical behavior can be observed with respect to financial policies and also with respect to inventory policies.

One possible difference might be the fact that businessmen are more "cycle conscious." This may be due to the fact that businessmen are obtaining more advice from economists in their own organizations or other consultant services than in earlier periods.

A study of the attitude and behavior of businessmen in this respect would be very valuable. It might help to correct misconceptions that exist.

Such investigations should be conducted by the intensive interview method that has been worked out by psychologists and economists. The findings might help to put the analysis and forecasting of business conditions on a more realistic basis.

6. *Effects of Inflation on Business Enterprises.* Inflation is commonly regarded as a stimulant to business activity, though it is recognized that this sort of stimulation tends to create maladjustments such as speculative inventory positions and unsound financing. Rising cost levels also make depreciation reserves inadequate for replacement of capital and put pressure on the financially weaker firms.

Not enough is known about the effects of recent and current inflation upon business positions and plans. A project involving both statistical analysis and field interviewing would disclose the extent to which the financial security and the present policies of business have been affected by rapid price rises and the expectation of further rises. This should make possible a more informed judgment on the desirability of adjustments in depreciation allowances and financial aids to small and new businesses.

7. *Effects of Inflation upon Fixed-income Groups.* Many families with fixed low incomes have experienced hardships as a result of the rise in prices since the war. Many proposals are being made for remedial action, including adjustments in payments or allowances by public agencies. To provide a sound basis for such actions we need objective statistics regarding the number of persons in such families, their sources of income, the degree of reduction in their purchasing power, and their present economic situation, including depletion of their savings and growth of indebtedness. Since current studies of incomes and consumption provide no adequate data regarding this problem, a special study of it should be undertaken.

8. *Speculation on Commodities Exchanges.* Commodities exchanges perform essential functions in the marketing of many agricultural products. The regulations adopted by the exchanges or imposed by government agencies to improve trading should be so designed and administered as to maintain adequate facilities for hedging and to encourage economically desirable forms of speculation that lead to quick and proper adjustments of prices to the true supply-and-demand situation. The events of the past year show the need for unbiased research on the economic results of adjustments in the rules and regulations governing such matters as margin requirements, the size of individual holdings, delivery points, and daily limits to price fluctuations.

9. *Long-range Investment Needs.* Increased production of goods and services calls for building up, maintaining, and modernizing the stock of productive plant and equipment through business capital investment. Too low a rate of investment in relation to consumer income and expenditures means a deficiency of capacity or of purchasing power; too high a rate of investment contributes to inflation.

It is important, therefore, to estimate the aggregate size and make-up of a private business investment "program" conducive to expanded output and stability of employment for, say, a decade ahead. On such estimates depend realistic and useful judgments as to (a) what rate of public investment is feasible and necessary; (b) whether current rates of business investment are inadequate or excessive in the light of long-range requirements for provision of adequate capacity expansion and maintenance of stability; and (c) whether the supply of investable funds will be adequate.

Estimates of capital requirements have been made in several fields but are still very poor for industrial and commercial investment. Careful study of the capacity and financing problems of individual industries is necessary.

10. *Regional Development Needs and Possibilities.* Balanced eco-

conomic development for the nation can best be achieved by fostering those policies and programs which will result in balanced economic growth in the various parts of the country. A balanced relationship between national aggregates of employment, investment, consumption, etc., may cover up major regional distortions which eventually would destroy the national balance.

As a test demonstration of what may be done in a region to analyze requirements for balanced development, the appropriate agency of the government might profitably enter into a co-operative arrangement with a reputable organization—research, university, or other—to study this question. Major responsibility for such a project preferably should rest with a qualified agency in the region of the study, such as the West Coast, the Southeast, or some other major region.

One value of such a joint study would be the careful articulation of regional and national economic development. Such a project would also serve to relate the federal regional development programs more closely to those of regional, state, and local governments and private organizations which operate close to the grass roots.

11. *Profits in Relation to Capital Formation.* In 1947, business, incorporated and unincorporated, spent 25 billion dollars on plant, equipment, and increase of inventories. This was financed from four primary sources, retained profits, depreciation reserves, new security issues, and bank loans. One of the most important and controversial questions is the relation between profits and investment requirements.

Corporate profits in 1947 were 16.9 billion dollars. Of this amount 10.3 billions, or 61 per cent, were retained for reinvestment. Only about 4 billions were raised from new security issues. High rates of profit and a high proportion of undistributed profit are often defended as essential to the needed rate of capital expansion. The present reliance on retained earnings is foreign to prewar experience and is closely related to highly graduated personal tax rates and their effect upon equity financing.

As a basis for wise policy with respect to capital investment and taxation, a great deal more needs to be known in detail concerning the amounts and disposition of earnings in various industries and in individual corporations. A research project in this field would be of great value.

12. *Economic Philosophy of the Independent Regulatory Agencies.* The policies followed in a large and significant sector of the American economy—transportation, communications, power, banking, and the securities markets—are directly affected, and often determined, by the economic philosophy of the various independent regulatory commissions and boards of the federal government (the Interstate Com-

merce Commission, the Maritime Commission, the Civil Aeronautics Board, the Federal Communications Commission, the Federal Power Commission, the Federal Reserve Board, and the Securities and Exchange Commission). The Federal Trade Commission and the National Labor Relations Board, moreover, have a direct effect upon the price level and price policies in industry as a whole.

These various regulatory activities are the outgrowth of separate acts of Congress conceived at different times and for varying purposes. Hence, there is no consistent approach on the part of the regulatory agencies to the development of policies geared to the maintenance of maximum employment, production, and purchasing power. Furthermore, there has as yet been no attempt anywhere in the federal government to develop a consistent economic policy for the regulatory agencies.

Consideration should be given to development of a research project designed (1) to analyze the existing policies of the independent regulatory agencies, and (2) to indicate the extent to which improvements may be needed in order to develop policies geared to the maintenance of maximum employment, production, and purchasing power. There is no office in the federal government presently staffed to handle a project of this type. The most fruitful method of approach would be to develop a project in co-operation with one of the best equipped university business schools.

13. *The Effect of State and Local Fiscal Policy upon Economic Stability.* While the effects of federal financial operations upon the business cycle have been extensively explored, state and local policies have received far less attention. It is generally agreed by state and local officials and others familiar with the economic effects of public finance that state and local taxation, borrowing, and spending policies tend to aggravate rather than to iron out business fluctuations.

There is no point in the federal government where the full array of problems in this field can be dealt with impartially, as a whole, and in the detail necessary to produce consistent and productive findings.

An investigation of this relatively neglected aspect of economic stabilization policies could be carried on as a whole, or broken into a number of narrower projects. Three major areas of investigation indicating the nature of the whole project are outlined below.

a) Determination of state and local financial data necessary to formulation of economic policy. Information with respect to the revenue, spending and borrowing of states and particularly localities are so late in appearing and so fragmentary that they offer little assistance in policy formulation. The appropriate government agency could finance the activities of a broadly representative group charged with

the responsibility of recommending the detail, the timing, and the proper collecting agency for state and local financial data.

b) Investigation of criteria for distributing federal financial aid to states and for determining state and local contributions as a means of promoting economic stability. Experience during the depression of the thirties and preliminary work by several economists indicate that the distribution of federal financial aid to states and the burdens placed upon state governments as a condition of receiving federal aid should be modified in accordance with general economic conditions. The problems involved in determining whether such modification is wise, and, if so, the nature and timing of the modification, are complex. Since all federal financial aid is involved, no federal agency can do the job. The volume of research required makes the task an inappropriate one for the Council of Economic Advisers. In view of the importance of this question, the Council of Economic Advisers could, however, appropriately finance a study by one or a group of investigators.

c) Factors influencing the timing of state and local public works expenditures. States and localities borrow and spend heavily for public works in prosperous periods, and restrict their spending in less favorable times. While the general pressures leading to these policies are well known, no comprehensive investigation of causes and specific realistic recommendations for gearing state and local finances to public work expenditures to general stabilization activities has been made. Support of such a study would produce valuable guides not only for state and local officials but for the federal government. The nature of the problem is such that it could not be most profitably undertaken by the federal government.

14. *State and Federal Laws Restricting Competition.* We need to review the mass of federal, state, and local laws and regulations of types that may hinder interstate commerce, reduce competition, or hamper the development of improvements in industry and trade. The number of such laws and regulations increased rapidly in the decade before the war. Well-known examples are the varied regulations governing motortruck transportation, the many types of quarantines and health and safety codes, and the diverse "fair trade" laws. Most such laws and regulations have commendable purposes, but no adequate appraisal has been made of their operation in practice and their combined economic consequences. The Council and the Joint Committee need information regarding this to be in a position to recommend legislation and appropriate co-operative action by federal, state, and local agencies designed to promote healthy competition between areas and within industry and trade.

15. *Programs for Depressed Areas.* Since the war some twenty-five areas have been identified as having special employment problems. Associated with coal mining, cutover timber areas, and certain other industries, these areas show signs of reverting to the chronically depressed condition which characterized them in prewar years. Besides the uncertainty such conditions hold for the residents of these areas, they are a constant threat to surrounding areas and to the country as a whole because of the danger of spreading. Both Congress and the President should have the best information of economic trends and problems in such areas.

As a demonstration of methods for checking on trends in these areas and preparing suitable policy and program recommendations, the appropriate government agency might co-operate with a qualified research agency or university research bureau by means of a contract. After having explored the problem, say in one particular area, and devised a reliable method of analysis, a similar study might be undertaken in other special employment problem areas. Such a project would be of greatest value as a means of identifying the danger spots in the economy from the point of view of where, geographically, they are located and how they may be dealt with most effectively.

DISCUSSION

JOSEPH J. SPENGLER: I find it difficult to comment critically upon Professor Ellis' report. First, it is confined to those aspects of economics which were treated or suggested by the authors of the recent survey. Second, the specific recommendations of these authors have been carefully presented by Professor Ellis. Therefore I shall indicate a danger and some omissions arising out of the highly differentiated approach to economic research that is current today.

First, the danger, which has to do with the over-all picture. A principal objective of economics is the rendering of service to the community and its parts. Accomplishment of this objective requires three things of economists: that they can communicate with and understand one another; that they continually integrate their separate principles into a unified body of doctrine; that they translate this body into a source of guidance and counsel for statesmen and entrepreneurs. At present we are not effectively doing all these things, in small part because we no longer seriously consider them worth doing and in large part because of the very great emphasis upon specialization in research. This emphasis, albeit necessary within limits, diverts the attention of too many economists from the task of integrating their work into the larger body of doctrine; it thus operates to make a Joseph's coat rather than a harmonious garment out of the skeins of doctrine.

Second, the omissions, which are particular and general, and which I shall illustrate with examples. Interesting and illuminating work remains to be done upon the evolution of wage structures in pioneer-firm representatives of newly-developing industries. How did these structures come into being at the inception of the industry? Under the impact of what influences did these structures change. When, if ever, did the structure, in its relative aspects, come to be accepted as "just" and "proper" and as an arrangement to be preserved.

A related subject concerns the rationale underlying present wage structures in particular industries. Where such structures exist—and statistical data testify to their existence and persistence—do they exist because the structure reflects the worker-productivity structure, or because of other reasons?

Students of labor problems are beginning to study the trade union as a multiple-purpose organization. Students of business organizations are following suit. Yet, granted that the purposes of the organizations are multiple, is much attention being given to the internal functioning of these social "organisms"? Whence come the purposes that guide them? By whom is the strategy formed? Who supplies the theory? Who develops the tactics? Only detailed institutional studies can provide us with adequate answers. It is quite proper for us to reduce economics to a theory of games, but if we do, let us be sure that we know who is playing the game.

The institutional aspects of price behavior seem to have gone by the board. Last year an effort was made to initiate a number of studies of OPA price data, these to be done by former OPA specialists who knew the data and the trade practices of particular branches of the economy. The effort was un-

successful. One got the impression that economists preferred to retreat into a monastery of blackboards and hypothetical functions and there shadow-box the problems of the economic world. Yet one hardly needs to be a student of prices to feel our great need of many careful, impersonal, and statistical-institutional studies of price behavior in particular branches of the economy.

Perhaps the most neglected area is the set of marches separating economics from sociology, anthropology, and political science. It is but another instance of everybody's business being nobody's business. Yet it may be presumed that the origin and the pressure for change in our societal structure are frequently to be found in this no man's borderland area. When Hayek published his polemic several years ago, some shouted contemporary equivalents of "Horse Feathers," whilst others were content to manifest alarm. Yet much of Hayek's work dealt with borderline questions respecting which our information is anything but firm. And the area to which his work related is but a portion of a much larger march-land.

We are living at a time when the study of economic history appears to be in abeyance, when politics is taking over economics, and when it is easier than usual for the propagandist to masquerade as a social scientist. Various kinds of selection operate and have operated in our society. One of them is economic; another is political. It used to be contended that economic selection, being superior to political selection, should be allowed to prevail over the latter throughout as great an area of affairs as possible. But what are the facts? How have these several modes of selection operated in the past? How are they likely to operate in the future? Our decisions regarding this future may be wiser if we secure answers to these questions.

A great change appears to be under way in the power structure of the Western World. Power is passing out of the hands of its present holders and they appear also to be losing the allegiance of the intellectuals. The Marxians believe they understand this shift, so laden with implication for the economics and the economic life of tomorrow. There is need for careful studies of such shifts as they have occurred in the past, and for the application, when feasible, of the findings of such studies to the present. Are the present power holders losing because they lack the courage and the firm decision to maintain their situations? Or are other reasons operative? Why are the intellectuals deserting?

There is much talk of a change in man's basic values and aspirations and of the implications of this change for economic theory and policy. It is said that the desire for security and leisure has dislodged the disposition to incur risk and put forth strenuous effort. And so on. If there is a change in values, its origin is twofold: the composition of the articulate population that writes of values is different today from what it was fifty years ago; there probably has been a secular change in the value system itself as it affects the several classes. But what are the facts? What are the implications?

Again consider public finance. The rate at which the national income will grow in the future will probably decline steadily in consequence of the rapid movement of the rate of population growth toward zero. At the same time, while military and other expenditures are high and possibly rising, three great

pressure groups have united unprecedented political and economic power for the purpose of swelling their "take" at the expense of the rest of the population. Not only do aggregate governmental expenditures threaten to exceed appreciably Clark's critical 25 per cent of the national income, but there is also a good probability that intergroup struggles will be intensified to the disadvantage of the national economy. Where do present trends lead? Is the latter-day history of ancient Rome of any significance?

Suggestions similar to the ones made could be added. Undoubtedly some of them will prove questionable when subjected to further analysis. But even they point to fields requiring the attention of economists.

R. B. HEFLEBOWER: In his paper Dr. Homan has emphasized research dealing with those *relationships among* wages, prices, and profits which are conducive to economic stability. Rather than develop that subject further I shall offer some suggestions concerning studies of the *flow of causal influences between* wages and prices.

As a first step we may inquire as to what periods of our experience can be studied most fruitfully. Although the events of 1945 to date have accentuated our interest in this phase of economics, these years were not those of a typical boom. It is true that the institutional character of the factor and commodity markets of these postwar years are akin to those under which we will operate in the near future. More importantly, however, was the presence of such temporary influences as the impact of exports on food prices, the monetary stimulus to inflation, and the abnormal backlog of durable goods demand—all of which conspired to give a peculiar twist to the expectations and responses of policy makers in unions and in business. Cost-of-living changes were sizable and were concentrated on the nonpostponable food outlays. Wage movements were not only industry-wide but economy-wide, and voluntary rationing was a frequent fact in industrial markets. Not unimportant, also, was the ability and willingness of business to finance its higher-priced inventories and sizable expansion of facilities without seeking a large part of the funds in the equity markets.

The atypical character of recent experience suggests that the delineation of a number of models with various combinations of conditions would be useful. Among the conditions included should be size of an initial wage increase and its width by firms and industries, the movement of productivity, the level and direction of change of consumers' incomes, the types of commodities—particularly of wage goods—for which prices are moving, and a number of factors affecting expectations, such as the government's fiscal operations, exports, and demand backlog of durable goods industries.

While no one such model will fit a historical period, partly because important institutional changes had not been completed before the war, the 1935-39 and the 1939-41 periods are worthy of study. The merits of the former include the fact that it covers three biennial census years and a period of sharp wage increases followed by two years of adjustment thereto. For a number of industries, the wage increases of the winter of 1936-37 were reflected in 1937 costs and margins over materials costs and hence in

prices. By 1939, however, these costs and margins had reverted more closely to the 1935 level even though wages remained at 1937 rates. Rather than continue on the possibilities of studying this prewar period, I turn to the reason for emphasizing the value of census data, for we face serious problems with respect to comparability of measures of wages and of prices.

The difficulties with statistical analysis of wages and prices are a combination of inadequacies of data, of conflicting methods of accumulation and of manipulation of the figures, and of divergent concepts being measured. In the first place it is difficult to obtain wage and price data which are comparable as to coverage. In manufacturing, wage data tend to be by plants while prices are by products. This fact of itself is not particularly serious where plants are devoted primarily to a given product line and where the price data represent an adequate sampling of the items in that line. It must be emphasized, however, that our usual measure of wages does not involve a sampling of wage rates for types of jobs in a plant but instead is computed by taking the total pay roll and dividing by the number of hours worked by all employees.¹ On the other hand price data consist of *quoted* prices for selected items in what is usually a quite diverse line. In spite of the strenuous efforts of the Bureau of Labor Statistics, the coverage of items for specific industries is often, if not usually, an inadequate measure of prices for that industry particularly where the data are to be used for such precise comparisons as that of prices charged by the industry and wages paid by it. This problem is the least serious in crude-product industries, somewhat more serious for semimanufactured products, and so limits analysis in most finished goods industries that the comparison of wages and prices by use of available data in these cases is usually improper.

Then there is the problem of the relation of *quoted* and *actual* prices which becomes particularly important here since the very method of collecting wage data means that they will, except where reporting industries are clearly trying to hide the facts, show actual hourly earnings. In contrast, the varying relationship of prices actually received to prices quoted is an important, if not the only, method of price change for an identical item in a number of important industries. This fact has been well documented. For example, the study made for the Office of Price Administration by the Bureau of Labor Statistics on the prices paid by buyers of steel, 1939-42—a period when quoted prices remained essentially the same—shows clearly how actual prices may change nevertheless.² Of course this is no news, but the point that needs to be driven home is that the importance of departures from quoted prices varies widely among industries and for the same industry at different times. Thus one of the reasons why increases in wages were not associated with corresponding increases in prices in many industries from 1939 to 1942 was the fact that manufacturers' realizations for identical items were advancing without changes in quoted prices. In contrast, after the war there was very

¹ This usually means employees engaged in manufacturing operations and excludes those in warehouses, shipping, sales, etc.

² Published in *Iron Age*, April 25, 1946.

little opportunity to raise realizations because the water had already been squeezed out.

Then there is a basic difference in the method of computing measures of wages and measures of prices. Except where special studies have been made to develop basic wage rates and changes therein such as was done by the Office of Price Administration in 1945-46³ or in the Bureau of Labor Statistics' "Index of Urban Wages," the measure of wage rates changes is that of average hourly earnings. As was noted above, this measure really uses current weights so that every change in the relative importance of each wage rate has an influence on the average for the group. Our wartime experience as demonstrated in the report to the President by the public members of the War Labor Board showed the great spread which under those circumstances developed between fixed- and variable-weight measures of wage rates. While it is not suggested that changes of that dimension are typical, it is quite probable that some of the movements of average hourly earnings during the business cycle reflect the varying weight method used in computing hourly earnings.

In contrast, fixed weights are the accepted method of computing measures of price change. We have ample evidence of the importance of changing significance of various items in a product line during the ups and downs of business to know that if there were some way of using varying weight index numbers we would obtain a significantly different record of price movements.

The shift in the relative importance of items in a firm's business over time is particularly relevant to the wage-price problem because different items in the line are characterized by quite divergent cost-price relations. Some provide short gross margins over factory cost and some long margins, and some yield slender operating profit margins and others wide ones. Furthermore, dynamic developments, such as movements of buyers' incomes and the divergent performance of direct and overhead cost during the ups and downs of business, affect different items in the line in a varied fashion. Typically, although not uniformly, an upward movement of the national income brings a shift of volume toward those items which provide longer gross and net margins which is the same as saying the items for which direct cost represents a smaller share of price. Thus, movements of direct cost are less important for these commodities and the shift of volume to these long-margin items provides management with a greater aggregate gross margin out of which to pay overhead and profit and a greater aggregate operating profit. If we add to this shift in importance of items in the line the fact that in boom periods the realization for each item is apt to rise without a change in quoted prices, we see how difficult—in fact, inaccurate—it is to compare the movement of a varying-weight measure of wages with a fixed-weight index of prices computed from quoted prices. I am confident that in a great many industries the ability to pay higher wages is much more dependent upon developments of the sort that I have been describing than is movement of quoted prices for identical items, but I am likewise confident that there are times at which

³ As part of its reconversion pricing operations. Data for a few industries were published in the OPA *Economic Data Series* (Government Printing Office).

this source of increased wage payments is no longer available. Having said this I must add that I am not certain as to whether and under what circumstances management looks upon this favorable movement of its realizations as a source from which it may pay higher wages.

It is beyond the limits of this discussion to suggest a solution to the problem of developing measures of prices which minimize the difficulties referred to here although I hope to make some suggestions of this sort in the near future. In some situations a census index of prices can be compared properly with wages, but this is possible only where a single, fairly simple common denominator of physical volume is available by which aggregate value may be reduced to a per unit basis. In other cases a more complicated measure is called for and it is not certain that any feasible device may be developed for a considerable portion of industry. The mere fact that we cannot develop adequate measures is no excuse for plunging ahead and blindly using the data which are available.

Statistical studies of wages and prices can be most useful where they are part of a full examination of the economic forces at work in the factor and commodity markets. The question then arises as to what new emphasis should be introduced in the usual theoretical and inductive research in these areas. The answer is that both static and *ceteris paribus* features of the analysis must be minimized. The union or the firm must be placed in the moving environment in which they live, which has two major consequences for the character of the analysis. First, the concomitance of influences which bear on those making the decisions is basic. For example, rising volume, easier selling conditions, better realizations, and a favorable mix—all developments typical of expanding demand for a product—put a quite different color on a wage increase than would exist if one or more of those conditions were absent. But it is exactly in such circumstances—that is, of several simultaneous cost and demand developments—that wage or price changes are ordinarily considered.⁴ Second, the expectations of the union or the firm, which may or may not be the same as the concomitant influences already experienced, play a major part in decisions. Here is where such factors as width of the wage advance or the prospects of buyers' incomes, and effects of cost and price movements on competitive positions of firms, bear on decisions. In contrast to the usual analysis which emphasizes a change in the costs or price of the firm compared to that of competitors, or even of the industry compared to the economy, the stress here is on situations in which prices and wages in general are in motion. Equally important considerations must bear on union officials' view of the future.

In identifying important influences and in appraising responses thereto the researcher must be guided by what exists in the market rather than by what his previous training has pointed to as relevant. It is in this connection

⁴In many commodity fields wage rate movements should be compared with the industry's margin over materials costs, not with its prices. A. C. Neal has given us the theoretical reasons for studying the cyclical movements of the margin over direct cost rather than the movement of selling prices. *Industrial Concentration and Price Flexibility* (1942).

that I comment on Professor Homan's reference to some of the reactions I have found among businessmen concerning the effect of volume on costs. These men argue that manufacturing costs will be about the same at volume rates substantially different if they know what the output rate and its distribution among items in the line will be. Where they know what the production is to be, they can adjust aggregate factory overhead so that it remains about the same per unit. Furthermore, they consider this knowledge of production pattern and rate to be a more important influence on lowness of cost than substantial increase of volume of uncertain amount and duration and distribution among the items in the line. Thus the way costs will perform, and particularly management's view of future costs, may be more a matter of certainty of volume than size of volume. Such a possibility thereby becomes a fact for the study of response to a wage increase, as well as a guide to numerous policies designed to stabilize operations.

These comments on research in wages and prices emphasize the need for the exhaustive study of individual markets in operation. This serves as an endorsement of Professor Bain's judgment⁵ referred to in this session by Professor Ellis, that synoptic analyses are of little value. The investigator cannot in such brief inquiries appraise the influence of concomitant experiences and of anticipations. It is possible that after a more complete analysis of one or more industries has been made by a researcher, he may compare his findings with what other industries show on the basis of a less elaborate study. The basic research, however, must be exhaustive; otherwise what appears to be added knowledge gained by a short-cut approach may be merely misinterpretation.

ALFRED C. NEAL: It is almost impossible to disagree with anything in Mr. Hoover's paper. We need more of the kinds of research that he suggests; of that there is little question.

However, the amount of funds and time available for investment in this whole field of research is limited. We cannot possibly get all we want or need. Perhaps I can make a suggestion or two as to where immediate emphasis might be concentrated from the point of view of business forecasting and the formulation of public policy.

First, I can only re-emphasize Mr. Hoover's point that we need better measures of the rate of investment accomplished in the immediate past and planned for the immediate future. We need especially a breakdown within manufacturing to bring out the divergent pattern in this field and probably a program of 100 per cent area sampling to get an adequate measure of investment by commercial concerns. We need regional breakdowns of the data to reveal unequal growth rates and shifts of industry among regions. And there is a strong presumption that a six-months interval is likely to be more satisfactory than a quarter for the reporting period. Finally, it would be helpful if the questions on planned investment were made conditional. We need to know not only how much investment is planned (on the basis of

⁵ In *A Survey of Contemporary Economics* (1948), edited by H. S. Ellis, pp. 163-167.

unknown conditions in the respondent's mind) but how the planned amount might be modified. Would the amount planned be affected if, within the next year, there were a sidewise movement, a drop of, say, 10 per cent or a rise of, say, 10 per cent in national output and by similar conditions as to construction or equipment costs. We should be able to get a much better basis for judging the firmness with which expectations are held, and how serious a cumulative movement might develop, if the data were collected in this or similar conditional form.

Second, from the point of view of both the forecaster and the policy maker, the next most serious gap, in my opinion, is in the area of motives for investment and the processes whereby these motives are translated into decisions. Admittedly, the dominant motive is that of profit, but what specific form does it take? On the basis of first- and secondhand information, we have found that maintaining competitive position is a major consideration in some manufacturing lines; that is, maintaining a given proportion of the industry's output. In the commercial field, a similar motive is evident in the adoption of modernization programs by other stores after one of the group of competitors has started or carried out such a program. In older companies, much new investment is undertaken to get out of the old competitive bracket into new products not subject to the same competitive forces (textiles and paper in New England, for example). In some companies there is a definite investment policy regarding new machinery that seems almost devoid of the usual cost-profit calculation. In one that I know of, a minimum replacement equal to the depreciation allowance is spent each year, more or less automatically.

I suggest that the difficulties and uncertainties involved in making close estimates of the present value of possible future income streams is so great that investment decisions are governed by institutional thought and policy patterns perhaps to a greater extent than they are governed by the standards of rational economic calculation that we have generally assumed. If this is so, then knowledge of such institutionalized activity will provide an extremely useful basis for determining policies. It would also provide a basis for supposing that undesirable patterns could be replaced by desirable ones; it would not be necessary, as is so often the case, to ask business to sacrifice for the common good something that has proved to be profitable.

Coupled with the study of motives must be the study of obstacles. It seems clear by now that the rate of interest is a minor obstacle on all but very large-scale, long-term investments. Availability rather than cost of funds, within reasonable limits of cost, seems to be determining. But another obstacle is certainly the anticipated level of cost for the investment. I have run across some cases in which the decision is made but its implementation rests almost entirely on costs. In one very large company, a similar consideration is to maintain a capacity expansion and modernization program which is stable; the company, out of consideration not only for costs but also for effect upon the economy, prefers to spread its program over a period of years. This kind of behavior, if widespread, ought to ease the policy maker's task considerably.

I should rate lower on the scale the urgency of developing more satisfac-

tory measures of how investment has affected productive capacity, production, and total expenditure. Perhaps you will judge me unduly pessimistic, but I doubt that we shall ever be able to set up satisfactory statistical relationships among output goals, capacity, and investment requirements for, say, ten years ahead. Perhaps it can be done for a few industries in which product and technology are least likely to change. For most industries, however, it is difficult to conceive of a means of linking today's output of one kind of goods with a future output of a different kind of goods serving a similar purpose; of linking today's capacity with a future capacity to make something else serving the same or a similar purpose, etc. Frankly, I am more afraid of using weak and tenuous relationships of this kind to build desirable patterns of production, capacity, and investment than I am of having none at all, because I am afraid that they will be taken seriously by the uninitiated.

The weakness in the links between output, capacity, and investment, as Mr. Hoover points out, does not permit us to translate a production goal of the future into a requirement for expansion of capacity, which can then be translated into an investment requirement. Can this be done with a satisfactory degree of reliability? Three or four years ago, we would have said that we needed about 10 per cent more blast furnaces to get a 10 per cent expansion in pig iron output. Now it appears that we can get more than that expansion from our existing blast furnaces by a few relatively inexpensive adaptations in their operation. In the light of today's knowledge, expansion three years ago may have been of the wrong type in the wrong places.

When such estimates are necessary but cannot be made with a satisfactory degree of accuracy, what can be done? Here I think we may learn a lesson from the businessman's book. We can develop so much flexibility that it does not make much difference whether our estimates are right or not, or even whether they are made or not. If we are afraid of too much saving, then build in flexibility which will quickly reduce savings or expand investment; if we are afraid of too much investment, build in devices enough to step up saving and moderate investment.

If we have good measures of current and prospective investment rates—and there are no formidable reasons why we should not—and if we know with a good deal of confidence what motivates investment decisions and how they are made, then I think we can proceed with more assurance of success to formulate policies which will be effective in maintaining high-level stability without predicting with any degree of precision how production, capacity, and investment are related.

While awaiting the results of research in the second and third areas outlined by Mr. Hoover, we can assuredly do a better job if we can more quickly get better research in the first and last.

AMERICAN ECONOMIC ASSOCIATION

PROCEEDINGS OF THE SIXTY-FIRST
ANNUAL MEETING

Cleveland, Ohio
December 27-30, 1948

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PROCEEDINGS OF THE AMERICAN ECONOMIC ASSOCIATION
ANNUAL BUSINESS MEETING, DECEMBER 29, 1948
HOTEL CLEVELAND, CLEVELAND, OHIO

The business session of the 61st Annual Meeting of the American Economic Association was held in Hotel Cleveland, Cleveland, Ohio, December 29, 1948, at 5:30 P.M., President Joseph A. Schumpeter presiding.

In the absence of P. T. Homan, Managing Editor of the *Review*, and of several chairmen of important committees and in view of the shortness of time, President Schumpeter suggested that the Secretary, J. W. Bell, include in his report an over-all account of this year's operations as well as some of the problems now facing the Association.

Professor Bell first reported on two matters carried over from the business meeting of last year. First, arrangements for the time and place of future annual meetings of the Association and of the Allied Social Science Associations. At a special meeting of representatives of the associations meeting at Cleveland, a general plan was adopted for providing for over-all joint meetings to be held every third year, independent meeting arrangements being made by individual associations in the intervening years. The next meeting in New York City during the Christmas recess, 1949, will be of the over-all type, hotel reservations being made in the name of the Allied Social Science Associations. The meeting in 1950 is scheduled, so far as the American Economic Association is concerned, at Chicago, with other associations making their own decisions as to when and where to meet. In 1951 our Association will go to Boston and again the arrangements will be independently determined, and in 1952 we will meet in Chicago along with the other members of the Allied Social Science Associations. This scheme of arrangements will be repeated thereafter until experience proves the most feasible practice.

The statement on academic freedom which was voted at last year's business meeting was printed and circulated to the chairmen of the departments of economics and to the presidents and chairmen of the boards of trustees or regents of some 700 colleges and universities. The Secretary reported that the response to this circular was inconsequential and that if the lack of response is an indication of noninterference with academic freedom, the committee of past presidents set up to consider petitions of grievance would serve as a stand-by committee rather than an active one.

The Secretary reported figures on growth of memberships and subscriptions, the composition of our membership, and its geographical distribution, and called attention to the figures and chart dealing with this data in the 1948 *Directory* of the Association.

A review of the Association's publications was followed by a brief account of the activities of the Association's standing and special committees. Special mention was made of the publication of the Association-sponsored volume,

A Survey of Contemporary Economics, and surprise was expressed that more members had not taken advantage of the privilege of buying this volume at a special discount. This discount to members is our only benefit in the publication arrangements, since we get no royalties from its sale.

In reviewing the financial condition of the Association, it was pointed out that despite increased revenue from dues and subscriptions, advertising, and other sources, costs have been increasing to a point where we are now regularly operating at a deficit. The problem which this presents is the alternative of reducing our activities or increasing our revenues. Since it is felt that what we are now doing is altogether worth while, the Executive Committee recommended that our dues and subscription rates be increased and that appropriate changes be made in our Charter and Bylaws. It was VOTED to accept the recommendation of the Executive Committee and to authorize the necessary changes in the Charter and Bylaws to bring this recommendation into effect. In substance, this means that the active members and subscribers will, beginning January 1, 1950, pay \$6.00 instead of \$5.00, that no changes be made in the junior membership or family rates, and that the rate for life membership be reduced from \$200 to \$100.

An account of the various activities of the Association may be found in the following reports printed in these Proceedings.

Report of Secretary, page 481.

Report of Treasurer, page 496.

Report of Finance Committee, page 501.

Report of Auditor, page 503.

Report of Managing Editor, page 508.

Reports of Standing and Special Committees:

Republications (B. F. Haley, Chairman), page 512.

Public Issues (S. H. Slichter, Chairman), page 513.

Teaching of Economics and the Training of Economists (Horace Taylor, Chairman), page 515.

Aid to Foreign Scholars (Mabel Newcomer, Chairman), page 519.

Reports of Council Representatives:

American Council of Learned Societies (F. H. Knight), page 520.

Social Science Research Council (H. A. Innis), page 521.

National Bureau of Economic Research (D. H. Wallace), page 522.

The report of the Committee on Elections and the certification of the election of new officers for the year 1949 was presented by the Secretary as follows:

In accordance with the bylaws on election procedure, I hereby certify the results of the recent balloting, and present the reports of the Nominating Committee and the Committee on Elections.

The Nominating Committee, consisting of Frederic B. Garver, University of Minnesota, Chairman, Woodlief Thomas, Board of Governors of Federal Reserve System, Edward S. Mason, Harvard University, Holbrook Working, Food Research Institute, Hazel Kyrk, University of Chicago, Vincent W. Bladen, University of Toronto, presented to the Secretary the list of nominees for the respective offices:

For President

Howard Sylvester Ellis

For Vice-Presidents

Edward Wight Bakke

Gottfried Haberler

Theodore W. Schultz

Oscar Clemens Stine

For Executive Committee

Arthur F. Burns

John Kenneth Galbraith

Earl J. Hamilton

Paul Anthony Samuelson

The Committee on Elections (Roy Blough, University of Chicago, Chairman, Ernst A. Dauer, Household Finance Corporation, and James Washington Bell) prepared biographical sketches of the candidates and ballots were distributed early in November. The canvass of ballots was made on December 20, 1948, and the results were filed with the Secretary.

From the report of the Committee on Elections, I have the following information:

Number of envelopes without names for identification	12
Number received too late	25
Number of defective ballots	—
Number of legal ballots	2,490
Number of returns from the mail ballot	2,527

On the basis of the canvass of the votes cast, I certify that the following persons have been duly elected to the respective offices:

President (for a term of one year)

Howard Sylvester Ellis

Vice-Presidents (for a term of one year)

Gottfried Haberler

Theodore W. Schultz

Members of the Executive Committee (for a term of three years)

Arthur F. Burns

Paul Anthony Samuelson

James Washington Bell, *Secretary*

Upon the announcement of the results of the election, the President-elect, Howard S. Ellis, was introduced by the retiring president, J. A. Schumpeter.

President Ellis graciously acknowledged the honor which the election to this office indicated and spoke briefly on the duties and responsibilities involved in serving in this capacity during the ensuing year. He then called upon Dean Simeon E. Leland to read a tribute to the memory of Charles O. Hardy. This tribute, found below, is printed as a part of these minutes.

A few comments were prompted by the item on the agenda entitled, "Ideas for the Continued Health of the Association," but the lateness of the hour precluded extensive discussion. The following report of the Committee on Resolutions was read by Professor C. Ward Macy:

WHEREAS, The Sixty-first Annual Meeting of the American Economic Association at Hotel Cleveland, Cleveland, Ohio, December 27-30, 1948, has been notably successful in every respect; and

WHEREAS, The members of the Association wish to recognize the time, thought, and effort on the part of those directly responsible for the stimulating meeting; therefore be it *Resolved*, That the Association express its appreciation to:

1. President Joseph A. Schumpeter and the committee which assisted him in arranging the program.
2. Professor James W. Bell, efficient Secretary of the Association, and his office staff.
3. All persons who participated in the program as speakers, discussants, and chairmen of the meetings.
4. The officers of other associations meeting concurrently who have co-operated in making possible several joint sessions.

5. The Committee on Local Arrangements under the chairmanship of Donald S. Thompson, of the Federal Reserve Bank of Cleveland, assisted by Professors John Gersting, of John Carroll University, A. B. Cummins and Sterling McMillan, of Western Reserve University, J. Gilbert McGrew, of Fenn College, George W. Sanford, of Case Institute of Technology, and Mrs. Eleanor Ksir, Secretary of the Committee; assisted also by Laird Landis, of the Federal Reserve Bank of Cleveland, who handled the relations with the press, and by the Cleveland Convention Bureau, whose full co-operation was extended to the local committee.
6. The management and employees of Hotel Cleveland for the excellent facilities and services provided for the members of the Association.

C. Ward Macy, *Chairman*
 Tipton R. Snively
 J. Richard Huber

The meeting was adjourned at 6.15 P.M.

IN MEMORIAM

Charles Oscar Hardy

1884-1948

Charles Oscar Hardy was one of the most distinguished critics of both the economic theory and practices of our time. His analyses were clear, sharp, and to the point. Sometimes devastating, his criticisms were always constructive and sportsmanlike. He worked not merely in the realm of theory but in the areas where the applications were both practical and controversial. His writings were chiefly in money and banking, in risk and risk bearing, in public finance, business forecasting and price control. He was versatile and prodigious. His thinking was typical of the individualism his life reflected.

Hardy was born at Island City, Missouri, May 2, 1884. He attended Ottawa University at Ottawa, Kansas, and later served his alma mater as Professor of History and Economics and as Dean of the College. In 1935, Ottawa conferred upon him its LL.D. *honoris causa*. Hardy's graduate training in economics and his Ph.D. degree in history were received from the University of Chicago (1916), to which institution he soon returned as a member of the faculty of the School of Commerce and Administration. In 1922, he became Professor of Economics at the State University of Iowa which was then drawing together a notable group of economists. In 1924, he became a member of the research staff of the Brookings Institution, Washington, D.C., where he remained until 1943.

The competence of Hardy's research and scholarship was indicated by a steady flow of notable publications. His Ph.D. thesis was on *The Negro Question in the French Revolution*. This historical background often distinguished him from many of his contemporaries. His volume of *The Credit Policies of the Federal Reserve System* is one of the best books published on that system and remains one of the notable books in economics. Always a competent critic of the nation's credit system and of the operations of the Federal Reserve agency, he later directed a Congressional inquiry into its

policies and practices. The questionnaires he mailed to the Federal Reserve banks were among the most searching and most difficult to answer which these institutions have ever received. Among other publications in the monetary field were numerous pamphlets on the devaluation of the dollar and the gold standard. His volume on *Risk and Risk-Bearing* was an important new view of a relatively unexposed field and was not without influence on his colleague at Iowa, Frank H. Knight, who later acknowledged a debt to Hardy in the preface to *Risk, Uncertainty, and Profit*.

In the "heydays" of the twenties, Hardy wrote on *Interest Rates and Stock Speculation* and on *Tax Exempt Securities and the Surtax*. This latter volume gave dramatic entrance into one of the heated fiscal controversies of the Mellon regime in the U. S. Treasury. It placed new facts before the public and, incidentally, converted Hardy from the point of view that the high surtaxes of 1921 were desirable in the interest of debt reduction to the belief that reductions in the higher surtax rates of that period were needed. In 1943, Hardy again wrote into the midst of fiscal controversy his pamphlet *Do We Want a Federal Sales Tax?* Those who think that only progressive taxes should be employed by a modern state and that regression cannot be avoided under a sales tax would do well to read this booklet. Some of the common sense observations made here should be learned by the extreme advocates of the ability-to-pay theory of taxation.

In connection with the economic problems of World War II and its aftermath, Hardy gave attention to odd-lot trading on the stock exchange, to war-time control of prices, to Federal Reserve credit policy, consumers credit, the implementation of the unemployment act, and certain other matters. But on the forefront of policy formation and administration, in the midst of controversy over economic ways and means, Hardy was to be found writing, debating, and discussing the issues with colleagues, friends, and dissenters.

This seeming change in emphasis from the academic to the practical became more sharply defined when Hardy left the Brookings Institution in 1942 to become economic adviser to the Alien Property Custodian. He transferred from this post to the vice-presidency of the Federal Reserve Bank of Kansas City where he reorganized their economic publications. In 1946, heeding the call of a former Brookings colleague, he became economist for the Association of Commerce of Chicago, leaving that position in the spring of 1947 to become staff director of the Joint Congressional Committee on the Economic Report. Their problems were his last concern.

As a teacher, as a scholar, as a notable editor of the *Journal of Political Economy*, as a reviewer and critic, as a public servant, as a fellow economist, Charles O. Hardy lived a full life. In good measure he earned the complete respect of his profession.

SIMEON E. LELAND

A PARTIAL BIBLIOGRAPHY OF CHARLES OSCAR HARDY¹

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REPORT OF THE SECRETARY FOR THE YEAR 1948

This report consists, first, of the minutes of the Executive Committee, which gives an official account of actions and activities, and, second, the Secretary's comments on the Association's operations for the year.

1. Minutes of the second meeting of the 1948 Executive Committee, Princeton, New Jersey, April 9-10, 1948:

The second meeting of the 1948 Executive Committee was held at Princeton Inn, Princeton, New Jersey, April 9-10, 1948. The meeting was called after luncheon and was continued through Friday and Saturday, adjourning at noon on the latter day. The following were present: President J. A. Schumpeter, J. W. Bell, M. A. Copeland, E. A. Goldenweiser, B. F. Haley, S. E. Harris, P. T. Homan, S. E. Leland, R. A. Lester, B. W. Lewis, I. L. Sharfman, Claire Wilcox, A. R. Upgren, and, by invitation, J. J. Spengler and D. H. Wallace. R. B. Hefebower and E. G. Nourse, who were in attendance at a meeting of the Research Committee, were also present at the Saturday morning session. P. H. Douglas was absent. The following members of the Nominating Committee attended the joint session of the electoral college of Friday evening: F. B. Garver, Chairman, V. W. Bladen, Hazel Kyrk, E. S. Mason, Woodlief Thomas, and Holbrook Working.

1. *Minutes.* The minutes of the Chicago meeting of December 27-31, available in galley and page proof, were reviewed and ratified.

2. *President's Remarks and Old Business.* In outlining the business before the meeting, President Schumpeter called attention to two matters acted upon at the annual business meeting on December 30, 1947, which require further implementation; namely, (a) publicity statements on academic freedom and functions of the committee of past presidents and (b) aid to foreign scholars.

Difficulties having been encountered in constituting a committee on academic freedom and the non-availability of a satisfactory mailing list of colleges and universities delayed action in carrying out the directive voted at the December 30 business meeting. In the course of the discussion, it was moved that copies of the statement pertaining to the use of texts in courses in economics be sent, not only to the presidents of colleges and universities, but also to chairmen of boards of trustees or regents of such institutions, as well as chairmen or heads of departments of economics. The communication should also call the attention of those concerned to the establishment of a committee of the Association to whom matters of academic freedom may be referred. It was VOTED to authorize the expense involved in such a mailing, and S. E. Harris volunteered to provide a comprehensive mailing list or negotiate for the use of an appropriate addressograph list.

The Committee on Aid to Foreign Scholars (Mabel Newcomer, Chairman, F. D. Graham, C. B. Hoover, Horace Taylor, Herbert von Beckerath, and Gottfried Haberler) has not yet been fully constituted. However, an announcement of the purposes of the committee has been prepared and an appeal, with contribution form, will be mailed to the membership along with a *Directory* questionnaire. The announcement will also be published in the June number of the *Review*. The committee has been authorized to seek outside help.

3. *Report of Secretary-Treasurer* (J. W. Bell). A total of 1,437 persons registered at the Chicago meeting. Of these, 1,202 were members of the American Economic Association, 74 were members of the American Finance Association, 71 were members of the Econometric Society, and 53 of the Economic History Association. These figures do not take into account overlapping memberships. Attendance was substantially larger than the registration figures would indicate, but the size of the meeting was definitely limited by hotel facilities available. The total cost of the meetings amounted to \$2,113, of which income from exhibits defrayed \$551, leaving a net figure of \$1,562 to be met from the Treasury. This deficit was augmented by an item of \$735 representing losses on dinner meetings. A portion of this deficit will be allocated to associations who shared in the arrangements.

Our membership is still growing rapidly. The present figure of 5,662 represents an increase of 333 since the year's end. The volume of business done in the Secretary's Office is taxing our facilities to the maximum. Practically all of Miss Tait's time is taken in keeping our records straight. The number of copies of our publication printed has increased to a present figure of 8,500.

Our finances are still in a sound condition although the past year's operations have

shown a slight loss on a cash basis and several thousand dollars loss on a contingent basis. We should, however, be able to live within the current income unless unusual appropriations increase the pace of our expenditures.

The question of increasing dues was again discussed. The Treasurer reviewed the financial history of the Association, recalling a report on the "Long-Run Financial Policy of the Association" prepared by I. L. Sharfman and J. W. Bell in 1945. The Treasurer's Report was accepted. No increase in dues was voted but other new sources of revenue were discussed.

Finance Committee. The present incumbents of the Finance Committee (R. C. Osgood, C. C. Wells, and J. W. Bell) were re-elected for the current year.

4. Publications.

a) *American Economic Review* (P. T. Homan). Copies of the list of exchange foreign subscriptions were submitted by Dr. Homan covering those now in effect and the European and Asiatic exchanges discontinued during the war years. The disposition of exchange copies of journals was discussed and the question was raised as to the desirability of filing copies of these journals not standard equipment for the Editor's Office with the Library of Congress or in some other permanent depository where the less ordinary journals could be made accessible to scholars. Dr. Homan called for reactions concerning the publication of articles in French and other languages. Sentiment seemed to favor translations rather than articles printed in the foreign language.

It was VOTED to take no action at present on the question of whether the office of managing editor should be held by a person occupying a policy making position with the government. It was ruled that the question of principle is not involved at this time in view of the possibly temporary occupation of such a position by Dr. Homan. If after the presidential election Dr. Homan considers his post on the staff of the President's Council of Economic Advisers a permanent one, the matter should then come up for reconsideration.

b) *Papers and Proceedings and the 1948 Directory* (J. W. Bell). The current volume on *Papers and Proceedings* was reported to be in page proof and it is expected that the copies will soon be off the press and in the mail. The volume will run 580 pages—524 papers and 50 proceedings.

The questionnaire to be sent to our membership in connection with the 1948 *Directory* was briefly discussed and the final formulation was left in the hands of the Secretary. Question No. 11 on War or Public Service was reformulated by the Committee on Research and the final form of this question was left to the discretion of the Secretary and the Chairman of the Research Committee, S. E. Leland.

c) *R.O.E. and Republication Volumes* (J. J. Spengler and H. S. Ellis). Business aspects of these publications were discussed. The status of our present contract with Blakiston was reported and the procedure in choosing follow-up volumes was left to the Committee on the Review of Economics, J. J. Spengler, Chairman. It was suggested that no new volumes be projected until reactions to the first volume can be observed.

5. Committee Reports.

a) *Teaching of Economics and Training of Economists* (Horace Taylor). A report from Professor Taylor describing activities of the committee and subcommittees was read by President Schumpeter. Cognizance was taken of this report; no action was called for.

b) *Research* (S. E. Leland). Information on public service of our membership sought by the committee will be obtained by a question devised by the Committee on Research which will be included in the 1948 *Directory* questionnaire.

The publication of a report on OPA has been given up.

The proposed revival of the monograph series to be determined "in the light of competing projects underway" was recommended in the form of an annual monograph prize award. It was recommended that this award be administered by a special committee set up by the Executive Committee or by the Editorial Board; that the award be made for the best doctoral dissertation of the year and that the award consist of a statement or citation and publication by the Association; that the monographs be sold at a low price to members and others; and that the proceeds form a revolving fund with which to finance subsequent monographs. It was VOTED that the proposal of the Research Committee be considered by a special committee composed of Chairman S. E. Leland and Secretary J. W. Bell, plus co-opted members, to report at the December meeting.

The Research Committee recommended the adoption of a proposal originating from the President's Council of Economic Advisers. After discussion and further explanation of the project by E. G. Nourse, the following resolution was VOTED:

The Executive Committee endorses the proposal of the Research Committee that the

Association sponsor a systematic and objective appraisal of the existing state of economic research and research needs in relation to the Employment Act of 1946, provided that this study is not to embrace any appraisal or advocacy of public policy.

The Research Committee is authorized, subject to the approval of a subcommittee of the Executive Committee to be appointed by the President, to negotiate such arrangements, financial and otherwise, with the Council of Economic Advisers, the Joint Committee on the Economic Report and other organizations, and with individuals, as may be needed to implement this project.

The Secretary-Treasurer of the Association is, under the direction of the chairman of the Research Committee, authorized to receive and disburse funds and to enter into contracts on behalf of the Association to implement the purposes of this resolution.

No additional funds are hereby appropriated to the Research Committee.

The subcommittee referred to in the above resolution consists of the President, the Secretary-Treasurer, and one other member (M. A. Copeland) appointed by the President.

c) *R.O.E.* (J. J. Spengler). The report of the committee published in the *Proceedings* reports chiefly the communications from H. S. Ellis, editor of the *R.O.E.* volume which is to come off the press in August.

d) *Republications* (B. F. Haley). H. S. Ellis has resigned the chairmanship and B. F. Haley has been appointed his successor. The reconstituted committee is planning ahead the next two or three volumes of the series. The wishes of our membership as reported by the results of the appeal for suggestions last year are quite in line with our own ideas on which volumes should come next.

e) *Committee on Public Issues* (S. H. Slichter). Professor Schumpeter read a communication from Professor Slichter which described the progress made by the two subcommittees: on Economic Stability, Donald H. Wallace, Chairman; and on International Economic Policies, Paul W. McCracken, Chairman. These reports were supplemented by a brief oral comment from D. H. Wallace and A. R. Upgren. A third subcommittee authorized at the December meeting of the Executive Committee has not yet been constituted.

After discussion, it was VOTED that the Executive Committee call the committee's attention to the fact that their activities have apparently been confined to the preparation of statements or panel reports, which represent only the first part of a bipartite assignment. The Executive Committee reaffirmed its interest in opinion polls referred to in the second part of the proposal and now directs the attention of the Committee on Public Issues to this part as well as to the first part (see item 5b of the Minutes of March 28-29, 1947, *Papers and Proceedings*, May, 1948, page 530).

f) *Honors and Awards* (F. C. Mills). The committee's work having been accomplished, no further report was forthcoming. Thanks are due the committee for their constructive service in implementing the newly established awards. The Secretary called attention to the announcement of the F. A. Walker and J. B. Clark Awards with citations and photographs of the medals appearing as a frontispiece in the volume of *Papers and Proceedings*, May, 1948.

g) *Foreign Honorary Members* (J. S. Davis). Their work having been accomplished, this committee was dismissed with appreciation and thanks for their services.

The December vote of the members of the Executive Committee present and the mail ballot of those absent on the candidates for an honorary membership was reviewed and the results were ratified. The following elections fill the quota for the year 1948: Ragnar A. K. Frisch (Norway), Ralph G. Hawtrey (United Kingdom), and Sir Henry Clay (United Kingdom).

h) *Nominations* (F. B. Garver). After dinner the members of the Nominating Committee (F. B. Garver, Chairman, Hazel Kyrk, V. W. Bladen, E. S. Mason, Woodlief Thomas, and Holbrook Working) convened with the Executive Committee to consider nominations for the President of the Association for 1949. After discussion of the panel of names submitted by the Nominating Committee and of additional names added by members of the Executive Committee, the members of the electoral college proceeded to ballot for the office of President. After the nomination was made, the Secretary notified the nominee and received his acceptance.

The solicitation of suggestions of names for the President as well as for other officers by a circular mailed to the membership was discussed and the idea was generally approved. Attention was called to the expense involved and the opportunities which members have in sending in suggestions in response to notices published in the *Review* and also in connection with the annual ballot. A separate mailing was considered expensive for the

purpose. It was VOTED that a separate sheet be included with the annual ballot soliciting suggestions of names for all offices to be filled in the next election following.

i) *Classification* (J. W. Bell). Copies of the revised draft of the classification of the fields of economics previously distributed in mimeographed form were reconsidered and the items appearing on the proposed *Directory* questionnaire were gone over in detail. The report of the committee was accepted and the Secretary was ordered to go ahead with the preparation of the 1948 *Directory*. The Executive Committee approved the Secretary's efforts to get outside funds for editorial purposes if such aid can be found.

6. *Report of Council Representatives.*

a) *A.C.L.S.* (F. H. Knight). In the absence of Professor Knight, the Secretary reported on the activities which had transpired since the December meeting, in particular, the meetings of the Conference of Secretaries and of the Council held at Rye, New York, January 28-29. He explained the temporary difficulties which the Council is having in balancing its budget and submitted a proposal involving an increase in the dues of the constituent societies. Reference was made to a special report on the relation of the American Economic Association to the Councils (see *Papers and Proceedings*, 1941, pages 573-574). It was pointed out that a proposed schedule of five cents per member would effect particularly heavy dues for our Association with its large membership and that only a small segment of our Association has a direct interest in economics as a subject in the humanities. Hence, it was considered reasonable to suggest that a smaller maximum be set in the new scale of dues. The matter was left to the President and Secretary to determine and to report upon at the December meeting. It was VOTED to assume the Secretary's travel expenses to the meeting at Rye.

b) *S.S.R.C.* (J. J. Spengler). An oral report was made supplementing the one published in the *Papers and Proceedings*. It was announced that Pendleton Herring would succeed Donald Young as President (not Executive Director) of the Council to take effect in the near future. Professor Spengler spoke of the rapid growth in funds available to the physical sciences and of the need for greater efforts on the part of the S.S.R.C. and the foundations in preventing a further deterioration of the social sciences with respect to the portion of our national income devoted to their support. The inclusion of social sciences in the National Research Foundation is not a cause regarded as lost. The report was accepted.

c) *N.B.E.R.* (D. H. Wallace). The December report of the activities of the Bureau and of the revived Universities-National Bureau Committee was brought up to date and projected special conferences on business cycle research and on economic growth and development were described.

7. *The 1948 Annual Meeting.*

a) Co-operation with the officers of the Allied Social Science Associations was discussed with a respect to future meeting places and joint or separate meetings. It was VOTED that the Secretary-Treasurer be authorized to arrange with the A.S.A. a joint meeting in 1950 if that association does not join us in New York City in 1949.

b) *Annual Program*. The balance of the meeting was devoted to a report on the proposed annual program by President Schumpeter and a discussion of this report.

8. *New Business*. The appointment of Dr. Howard S. Piquet as representative of the Association to the American Documentation Institute was approved.

Adjourned Saturday at noon.

2. Minutes of the third meeting of the 1948 Executive Committee, Cleveland, Ohio, December 27, 1948:

The third meeting of the 1948 Executive Committee was held at Hotel Cleveland, Cleveland, Ohio, December 27, 1948, at 10:00 A.M., President Joseph A. Schumpeter presiding. Other members present were: Bell, Copeland, Ellis, Goldenweiser, Haley, Harris, Homan, Leland, Lester, Lewis, Sharfman, Uppgren, and Wilcox, and, by invitation, Haberler and Schultz. Absent was P. H. Douglas.

1. *Minutes*. Minutes of the Princeton meeting of April 9-10, 1948, were APPROVED as distributed in mimeographed form with the minor corrections subsequently made.

2. *President's Remarks and Ratification of Mail Ballot*. President Schumpeter called attention to the full agenda and suggested that we proceed promptly to matters requiring action. The mail ballot to the members of the electoral college completing unfinished business relating to the selection of our representative to the S.S.R.C. was ratified. This ballot resulted in the choice of George W. Stocking.

3. *Secretary's Report* (J. W. Bell). The report of the Secretary describing the chief activities of the Association, e.g., annual meeting, publications, and the operations of the various committees, was read and ACCEPTED. In ordering the discharge of the Committees on Nominations and Elections, a vote of appreciation was passed.

4. *Treasurer's Report* (J. W. Bell). The report of the operating results and the financial condition of the Association was reviewed and ACCEPTED.

An overdraft of \$188 by the Committee on Survey of Economics (Development of Economic Thinking and Information) was authorized.

A special memorandum submitted by the Treasurer recommending increased dues and subscription rates was given careful consideration and after extended debate, it was VOTED to increase the present \$5.00 dues and subscription rates to \$6.00; to maintain the present \$3.00 rate for junior members (which are hereafter to be defined as "registered" students); to maintain the present \$1.00 rate for family members; and to reduce life memberships from \$200 to \$100 (which reduction is to become effective immediately). The \$6.00 rate applying to members and subscribers will become effective January 1, 1950 (bills for 1949 having been sent out in November, 1948). In order to implement this vote, it was ordered that the recommendation be presented at the annual business meeting of the Association (held on Wednesday, December 29) and to call for a vote authorizing the increase and to effect appropriate changes in the Charter and Bylaws to give such increases due effect.

5. *Publications.*

a) *Managing Editor of the Review* (P. T. Homan). The report of the Managing Editor was distributed, read, and ACCEPTED. The budget recommended for 1949 was APPROVED, and it was VOTED to authorize the Managing Editor to proceed with plans to enlarge the page size of the *Review* and to redesign the cover and inside pages. The estimated cost of this slight change would amount to little more than \$50 and could go into effect before 1950. No action was taken with respect to suggestions made affecting other aspects of the format. Mr. Homan reviewed the action of the Managing Editor and the Secretary with respect to complimentary foreign subscriptions. Only 13 of the 100 authorized have so far been used. A large number of applications, chiefly from individuals, are being considered. Attention was called to the fact that exchange restrictions are being relaxed in many countries and that this factor no longer applies with the same force in supporting applications for complimentary subscriptions.

The status of the Managing Editor, reviewed at the April meeting of the Executive Committee, was further discussed, but the matter was laid on the table. Recommended readjustments in the salary scale affecting Miss Doris Merriam in the *Review* office and Miss Gertrude Tait in the Secretary's office were APPROVED. R. A. Musgrave and William H. Nicholls were APPROVED as successors to B. U. Ratchford and L. H. Seltzer whose terms on the Editorial Board expire at the end of 1948.

b) *Papers and Proceedings and the 1948 Directory* (J. W. Bell). Publication arrangements made by President Schumpeter and the Secretary were reported which would make the volume of *Papers and Proceedings* this year one of manageable size. Papers of a number of the joint sessions will be published in the journals of the co-operating associations and some sessions will be reported in the form of a précis or abstract instead of a complete record of all papers presented.

Bottlenecks at the printer twice delayed the appearance of the 1948 *Directory*. Originally scheduled to appear with the September number of the *Review*, it was again delayed in December, and arrangements have been made to issue the *Directory* separately in January, 1949. The estimated cost and the contents of the *Directory* were described in the Secretary's and Treasurer's Reports.

c) *Republication Series* (B. F. Haley). Volume IV, on the *Theory of International Trade*, is scheduled to appear at an early date. This volume is being edited by H. S. Ellis and L. A. Metzler, and new volumes are being planned on *Monetary Theory* (F. A. Lutz and L. G. Mints, co-chairmen); and *Public Finance and Fiscal Policy* (Roy Blough and Arthur Smithies, co-chairmen). A third new volume now being planned is to be on the subject of *Price Theory* (K. E. Boulding and G. J. Stigler, co-chairmen). A volume of republications on the *Scope and the Method of Economic History*, sponsored jointly by the Economic History Association and the American Economic Association, has reached a fairly advanced stage and the chairmen of the selection committee may have definite results to report at the time of our spring meeting. Settlements of accounts by the Blakiston Company on Volumes I, II, and III of this series were presented and it was noted with gratification that ultimate profits will be shown on all three volumes. We

have indeed drawn \$1,000 against future earnings during the past year and the Blakiston Company offers to advance another \$1,000 against the value of inventory if we desire to make such a draft.

In view of the fact that this project is beginning to stand on its own feet, it was suggested that chairmen of the selection committee no longer be asked to render their services gratuitously but be compensated with a small honorarium for the rather arduous work involved in making the selections, obtaining publication rights, and getting material in shape for publication. It was VOTED that Chairman B. F. Haley and Secretary J. W. Bell work out an arrangement for appropriate compensation to the chairman and co-chairman of the selection committee and that they present their recommendation at the April meeting of the Executive Committee.

d) *Survey of Economics* (J. J. Spengler, Chairman; H. S. Ellis, Editor). Professor Ellis submitted a report from the Blakiston Company on the first two months' sales of the *Survey of Contemporary Economics* and called attention to the fact that only about one-third of the sales had at that time been made to the members of the Association at the privileged price. No plans for future operations were submitted, but Professor Ellis indicated that he thought that new volumes might appear at five- to ten-year intervals if the reception of the present volume proves to be enthusiastic. We could probably get commercial houses to publish such volumes but if done by the Association more could be gotten for the money outlay. Congratulations and thanks were VOTED to H. S. Ellis and members of the committee.

A request that the A.E.A. assume sponsorship for the translation of Sombart's six volumes by Professor Geiser was discussed at this point. Apparently the request involved merely putting on record the opinion of the A.E.A. that it should be published, but there was some chance of getting a subsidy elsewhere if our Association would approve its publication. It was pointed out that this request does not concern the Republication Committee, nor would it involve the Committee on Survey of Contemporary Economics (Development of Economic Thinking and Information). Thereupon President Schumpeter requested Managing Editor Homan to submit a report at the April meeting of the Executive Committee on the whole matter of translations of foreign classics. It was stated that other translations were as important, if not more so, than Sombart's works.

6. *Reports of Other Standing and Special Committees.*

a) *Research* (S. E. Leland). No meeting of this committee has been held since last April at Princeton. The round table session on the program was organized to appraise the activities of the committee and to prepare the way for future operations. The questionnaire (No. 7 on the *Directory* questionnaire) has not been processed, but the answers to this question by certain segments of our membership have been examined and further work may be accomplished in time to report at the April meeting. The committee has husbanded its resources and still has left an unexpended balance of some \$600. The question of the reconstitution of the committee was discussed but no action was taken in this respect, since the committee now has powers to co-opt new members. It was VOTED to accept the report, continue the committee, and reappropriate the unexpended balance.

b) *Teaching of Economics and Training of Economists* (Horace Taylor). The report of this committee was read by Professor Schumpeter. After a discussion of the proposals made in this report, it was VOTED to acknowledge with thanks the efforts of Professor Taylor and the members of his committee and of the subcommittees and to ask for the submission of complete reports of all these units, not as of June 30 as suggested in the reports, but by November or in ample time to consider before the annual meeting.

3. Minutes of the first meeting of the 1949 Executive Committee, Cleveland, Ohio, December 30, 1948:

The first meeting of the 1949 Executive Committee was held in Hotel Cleveland, Cleveland, Ohio, December 30, 1948. The meeting was called to order by President Howard S. Ellis. Others present were: Bell, Burns, Haley, Lewis, Samuelson, Schultz, Schumpeter, Sharfman, and Upgren; by invitation, Copeland, Harris, and J. J. Spengler. P. H. Douglas was absent.

6. *Committee Reports Continued:*

c) *Public Issues* (S. H. Slichter). In the absence of Professor Slichter, Professor Upgren read the report which was ACCEPTED and ordered printed. It was VOTED to reappropriate the unexpended balance of appropriated fund (\$1,029) for the use of the two subcommittees now at work. This action involves shifting the \$500 not used by a

subcommittee which was authorized but not appointed to complete the work of the two subcommittees now functioning.

d) *Aid to Foreign Scholars* (Mabel Newcomer). In the absence of Miss Newcomer, the report was read by President Ellis. It was ordered ACCEPTED. This committee has some \$1,200 at its disposal, the amount representing contributions received from members and a small balance of unexpended funds appropriated.

e) *Academic Freedom* (F. C. Mills). The Committee on Academic Freedom has been reconstituted with F. C. Mills, E. A. Goldenweiser, and I. L. Sharfman as members. The Secretary reported at the business meeting that a copy of the resolution on academic freedom had been sent out to some 770 colleges and universities, both to department heads and to chairmen of boards of trustees or regents. Very little response resulted from this circular and no further developments have occurred. The committee stands ready to receive any grievance reports or complaints of violations of academic freedom.

f) *International Co-operation Between Academic Economists* (Gottfried Haberler). It was VOTED to continue this committee and to authorize the appointment of a representative of our Association to attend any UNESCO meeting called to consider these matters which might be held before April. Such representative would serve as an observer and as a participant to the extent of letting other participants know how the members of our Executive Committee stand on the formation of an international economic association, the holding of international congresses, and the like.

g) *Reports of Council Representatives*. In the absence of H. A. Innis, a report was read by Professor Schumpeter and this was supplemented by remarks from J. J. Spengler. F. H. Knight, representing the Association on the A.C.L.S., was not present, and a brief statement on the activities of that council was made by the Secretary. A. F. Burns reported informally on the activities of the N.B.E.R. in the absence of D. H. Wallace.

7. New Business.

a) *Proposal of the Transportation and Public Utilities Group to Be Recognized as a Constituent Section of the A.E.A.* After full discussion of this proposal, it was VOTED to communicate to this group the composite views of the members of the Executive Committee; namely, that in our opinion the statutes of the American Economic Association do not recognize the organization of separate segments or sections. Our policy is to permit and even encourage the organization of specialized segments of our membership when the purposes of our Association fail to serve adequately their own special needs. Our obligation is to six thousand members, representing a great diversity of interests, both general and special in character. When a group becomes sufficiently choate to demand a section of our program each year, the fragmentation process has begun. Separate organizations have been established in recent years and these groups are virile enough to support their own organization. At appropriate times, our Association will arrange joint programs with some specialized groups and at other times with others, but we do not favor the sectional type of organization all under one umbrella. Our organization must remain flexible enough to permit these satellites to gravitate within an expanding orbit.

b) *Constitution of the Nominating Committee for 1950 Officers*. President Ellis announced the selection of the following candidates for membership on this committee: S. E. Leland, Chairman, E. C. Simmons, Margaret G. Reid, J. K. Hall, Wolfgang Stolper, and Lloyd Reynolds.

c) *Time and Place of Annual Meetings*. It was VOTED to accept the proposal of a schedule or pattern of meeting arrangements worked out by the Secretary and presented before a group of representatives of allied associations meeting in Cleveland, 1948. The first few years of this schedule involve meeting in New York City in 1949, at the Hotel Commodore and the Grand Central group of hotels (arrangements being made in the name of the Allied Social Science Associations); at the Palmer House and the Congress Hotel in Chicago, 1950 (arrangements being made in the name of the A.E.A.); at the Statler Hotel in Boston in 1951 (arrangements being made in the name of the A.E.A.); and at the Stevens Hotel in Chicago in 1952 (arrangements again being made in the name of the Allied Social Science Associations).

d) *Program for 1949 Meeting*. The balance of the meeting was devoted to the discussion of subject matter and procedures for the 1949 meeting. President Ellis suggested as a main subject, around which half of the program might be built, "A Stock-taking of the Capitalistic System in the United States," the rest of the program being available for a miscellany of subjects representing reports on the results of investigations coming to completion at this time.

The reactions to such a proposal were favorable, and it was pointed out that a large

variety of interests would be served in examining the capitalistic changes occurring during the Great Depression and the recent war, and that groups such as the public utilities and transportation segment might find this general topic inclusive enough to incorporate their special interest; e.g., a comparative study of the railroad operations in the United Kingdom and the United States. Other *ad hoc* programs could be made to fit into this pattern. It was suggested that although an over-all preview rehearsal, such as we had at Riverside in 1940, might not prove feasible, small group sessions might be held at Association expense preliminary to the annual meeting. Professor Ellis also proposed that foreign economists visiting in this country might be invited to participate in this program, especially those who have played an important part in policy determination in their own countries. Concurrent sessions on teaching of money and banking, labor, public finance, etc., were suggested.

It was VOTED to hold the next meeting of the Executive Committee April 1-2, 1949, the place of meeting to be determined by the President and the Secretary in light of the geographical distribution of the membership of the committees.

ACTIVITIES AND OPERATIONS

Annual Meetings. In keeping with the sentiment expressed in favor of joint meetings which was approved by vote at the annual business meeting held at Chicago, December 30, 1947, that "insofar as feasible, programs of common interest to the societies concerned . . . be arranged," President Schumpeter and the Program Committee have co-operated closely with the representatives of the American Statistical Association and others in planning this year's meetings. Limited hotel facilities precluded an all-out joint meeting with the whole allied social science group, but an arrangement of this kind is contemplated for the 1949 meeting in New York City, where we will have available the Grand Central group of hotels.

Representatives of the associations meeting at Cleveland will confer and plan a schedule for joint and partially joint meetings for future years. Unless other large groups, like the A.A.A.S., the A.H.A., and the M.L.A., shift the pattern of their scheduled meetings, we will probably find it desirable to stagger our meeting places outside of their competitive orbit and we may also want to consider meeting in centers other than the New York area and Chicago if we wish to serve the diversified geographical segments of our membership and the special interests represented within the Association and related groups.

Membership. The 1948 *Directory* contains a chart showing the growth of the Association's membership and subscriptions from 1886 to date (see appendix, page 314). As of November 30, 1948 (the date of closing our books for the annual audit), we had a total mailing list of 5,902 members and 2,448 subscribers. This represents an increase of 573 members over last year and 250 subscribers. Junior members increased from 323 to 448, a net gain of 125. The breakdown of classes of members is shown in the exhibit following this report.

The number of copies of our publications now printed has increased from 8,200 last year to 9,100. We count on an inventory of about 500 copies to meet the demands of new members and the growth of subscriptions and sales. This allowance is not too liberal. We still find it necessary to repurchase many out-of-print numbers of recent date and we run advertisements in the *Review* for this purpose.

Geographical Distribution. A table in the 1948 *Directory* (page 317) shows the geographical distribution of members and subscribers for selected years

from 1933 to 1948. Figures for previous years back to 1919 are shown in the table on page 460 of the *Papers and Proceedings*, May, 1945. Most of our members (about 77 per cent) are still found in the northeastern and middle states. This is about the same proportion as existed in 1946. Concentration of membership is heavy in New York. The number of foreign members and subscribers continues to increase and is now much larger than in prewar years (from less than 500 to over 900). The marked decline in the number of South American subscribers from 88 in 1946 to 17 in 1948 is accounted for by the fact that the Rockefeller-supported American Library Association subscriptions expired at that time.

Publications. The progress of the *Review* and the activities of the Board of Editors are treated in the Report of the Managing Editor. The size of the *Review* has been maintained despite increasing costs, and in spite of many obstacles the issues have appeared on schedule.

The *Papers and Proceedings* of the sixtieth annual meeting, held at Chicago, December 28-31, 1947, was again issued as a separate number. A printing bottleneck precluded its appearance as a supplement to the March number of the *Review*, and rather than hold up the *Review*, the *Papers and Proceedings* volume was mailed out early in May. Its size, somewhat reduced from the previous year, still bulked large (591 pages). The "Proceedings" section (pages 525-578) was reprinted under separate cover and distributed to the officers of the Association and to others on request. We do not contemplate continued bulky volumes of *Papers and Proceedings* since other outlets are being made available for some of the papers presented at joint sessions; e.g., new journals like that of the American Finance Association, the Industrial Relations Research Association.

The 1948 *Directory* of the Association was prepared from questionnaires received before the June 15 deadline. Manuscript was forwarded to the printer with the hope that the volume might appear with the September number of the *Review*, but this schedule proved impossible. Every effort was then made to get the *Directory* out with the December number, but even this deadline could not be met by the printer. Hence arrangements have been made to issue the *Directory* as a separate volume in January. Members will receive their copies without charge. Subscribers must send in orders at the \$3.00 subscription price. The cost of this volume of about 350 pages is estimated at \$6,600, of which only a small part will be met by sales. We believe that the usefulness of the *Directory* will justify the outlay.

The information booklet, describing the purposes, organization, and activities of the Association, was re-edited and distributed to officers and to those wanting to know what the Association is and what it does. This booklet is particularly useful in soliciting new members. It can be supplied in limited quantities to chairmen and heads of departments for distribution to colleagues and graduate students.

Photographs of past presidents Paul H. Douglas, Jacob H. Hollander, Henry R. Seager, and Carl C. Plehn appeared as frontispieces in the *Review* this year. Biographical sketches of deceased past presidents accompanied their photographs.

We continue to list announcements of vacancies and applications for positions in the section devoted to this purpose in the back of each issue of the *Review*. Quite a number of inquiries are made concerning these announcements, and we believe it worth while to continue this service.

The employment register, first started at the Atlantic City meeting, was repeated last year at Chicago. Though the volume was somewhat less in Chicago than at Atlantic City, over a hundred announcements of vacancies and about 175 applications for positions were filed and the rooms made available for conferences were continuously occupied. This experience justifies continuing the practice at the Cleveland meeting. Some 100 vacancies and 250 applications were recorded at Cleveland.

Committee Activities.

Committee on the Review of Economics. The history of the activities of this committee dates back to April, 1945, when it was proposed that the Association sponsor the publication of a volume or a series of volumes which would summarize the developments in the field of economics during the past ten or fifteen years (see *Papers and Proceedings*, May, 1948, pages 560-562). Last August a volume entitled, *A Survey of Contemporary Economics*, was published under our auspices by the Blakiston Company and it is available to members in good standing at a cost price of \$3.35. List price to the trade is \$4.75. The sum of \$7,700 was appropriated in order to make these terms possible. The cost has slightly exceeded this amount. The Editor, Howard S. Ellis, the thirteen authors, and the twenty-six critics contributing to this volume are to be congratulated on their accomplishment.

The Blakiston Company reports that from August 25, when the volume was published, to October 31, 1948, they had sold 1,341 copies—a good sale for such a short period of time. However, only 526 Association members had taken advantage of the special price of \$3.35, which fact is disappointing indeed when we consider that the Association receives no royalty or other compensation in the sale of this book. Our sole advantage in publishing it was to obtain this special price for the benefit of our members.

Committee on Republications. Professor H. S. Ellis asked to be relieved of the chairmanship of this committee and B. F. Haley was appointed to succeed him. The committee reviewed the results of the questionnaire sent out to members, considered the topics most favored by those who responded, and arrived at the following decisions: (1) to delay publication of a volume on labor problems for the time being (the appearance of a number of volumes in labor seems to serve the purpose of summarizing developments in that field); (2) to plan volumes on monetary theory, public finance and fiscal policy, and on price theory; (3) to co-operate with the committee of the Economic History Association of which Arthur H. Cole is Chairman on the publication of a volume on *The Scope and Method of Economic History*.

Volume IV of the series on *The Theory of International Trade* (H. S. Ellis and Lloyd Metzler, co-chairmen of the selection committee) is still in press but should appear soon. Chairmen of selection committees have been ap-

pointed for the subsequent volumes on monetary theory, public finance and fiscal policy, and the jointly sponsored volume on the scope and method of economic history.

The Blakiston Company has submitted a statement of account as of November 1, showing the status of sales, costs, inventory, and receipts covering Volumes I, II, and III. Volume II shows a net profit and Volumes I and III show a loss if no value is placed upon the inventory, but allowing for the stock on hand, profits will materialize. We have accepted one advance of \$1,000 against future earnings and a similar offer has been made for the advance of another \$1,000 if we care to withdraw it.

Committee on Research. The Committee on Research (S. E. Leland, Chairman) has organized a round table session at the Cleveland meeting with prepared papers reviewing research as seen in *A Survey of Contemporary Economics*, research in the area of plant capacity and investment, and research in the field of prices, wages, and profits.

The answers to question 7 (public service record) of the 1948 *Directory* questionnaire have not been processed, though the answers have been perused on the questionnaires of members within some of the subject-matter groups.

Committee on Public Issues. A progress report of this committee (S. H. Slichter, Chairman) was submitted at the April meeting of the Executive Committee. Two subcommittees (Economic Stability, D. H. Wallace, Chairman, and International Economic Policies, Paul W. McCracken, Chairman, and A. G. Hart, Acting Chairman) have held meetings (involving \$476 for expenses) and will soon be ready to report. A third subcommittee "on one or more of the following: patents, concentration of economic power, labor, credit control, and conservation," has not been constituted. An appropriation of \$500 was authorized for such a purpose at the December 31, 1947, meeting but was reallocated at the December 30, 1948, meeting.

Committee on the Teaching of Economics and the Training of Economists. This committee (Horace Taylor, Chairman), has been at work over the past several years. Several subcommittees report substantial progress, but the progress of work in others has not yet reached the report-making stage. The large amount of work done by these subgroups and the material collected make it highly desirable that these committees finish their jobs so far as the material has been processed and submit reports representing the progress up to date.

An arrangement recently consummated involves the co-operation of our committee with the Office of Education. Dr. J. Laurence Phalan, specialist for economics in the Division of Higher Education, has been appointed executive secretary of the committee. Working at full time and having the facilities of the Office of Education at his disposal and co-operating with similar committees of the American Political Science Association, progress seems to be assured.

Committee on Aid to Foreign Scholars. This committee (Mabel Newcomer, Chairman) has appointed foreign committees in the Netherlands, England, and Germany, and is establishing contacts in Austria and Italy. Specific

requests for aid have been received and shipments, chiefly of books and journals, have been made. Contributions received from members amounted to \$1,187.50 which, together with the \$100.00 appropriated for the organization of this committee, has been sufficient for current needs. So far the committee has spent \$80.62.

Committee on Foreign Honorary Members. Three new members were added from the panel of nominees submitted by the J. S. Davis committee at the April meeting of the Executive Committee: Sir Henry Clay, Ragnar Frisch, and Ralph G. Hawtrey. This committee was discharged after having performed its functions, and in due course a new committee will have to be constituted if the list of living honorary members is to be raised to the limit of twenty-five.

Committees on Nomination and Election. The Nominating Committee (Frederic B. Garver, Chairman) having performed its function was discharged. Appreciation is due the members of this hard working committee. The Committee on Elections (Roy Blough, Chairman) held two meetings—one to prepare ballots and election material and the second to scrutinize the accuracy of the ballot count.

Finance Committee and Auditor's Reports. These reports are treated in connection with the Treasurer's Report.

Committee on International Co-operation. An exploratory committee (Gottfried Haberler, Chairman) was appointed by President Schumpeter to investigate the opportunities for re-establishing the contacts, broken off by the war, between universities and individual economists, in co-operation with UNESCO. Professor Haberler reported on a meeting at UNESCO in Paris, November 10-11, concerning the organization of an international congress of academic economists to be financed by UNESCO and on the possible organization of an international association of economists.

Reports of Council Representatives. No reports have been received, but representatives are expected to be present at the Executive Committee meeting to report in person, except D. H. Wallace, who will be unable to attend.

Committees Appointed During the Year:

Committee on Academic Freedom	Committee on Elections
Frederick C. Mills, Chairman	Roy Blough, Chairman
I. L. Sharfman	Ernst A. Dauer
E. A. Goldenweiser	James Washington Bell
Committee on Aid to Foreign Scholars	Nominating Committee
Mabel Newcomer, Chairman	Frederic B. Garver, Chairman
Gottfried Haberler	Woodlief Thomas
Herbert von Beckerath	Edward S. Mason
Frank D. Graham	Holbrook Working
Calvin B. Hoover	Hazel Kyrk
Horace Taylor	Vincent W. Bladen

Committee on Public Issues	Exploratory Committee on Inter-
Sumner H. Slichter, Chairman	national Co-operation
Arthur R. Upgren	Gottfried Haberler, Chairman
Corwin D. Edwards	Howard S. Ellis
Frank D. Graham	Theodore W. Schultz
Myron W. Watkins	James Washington Bell
Subcommittee on Economic Sta-	Finance Committee
bility	Roy C. Osgood, Chairman
Donald H. Wallace, Chairman	Charles C. Wells
Emile Despres	James Washington Bell
Milton Friedman	Program Committee
Albert G. Hart	Joseph A. Schumpeter, Chairman
Paul A. Samuelson	Donald H. Wallace
Subcommittee on International	Robert A. Gordon
Economic Policies	Arthur F. Burns
Paul W. McCracken, Chairman	Arthur Smithies
Paul T. Ellsworth	Edgar M. Hoover
K. E. Knorr	Paul A. Samuelson
Frank W. Fetter	James Washington Bell

Representatives of the Association on Various Occasions:

- Inauguration of James L. Zwingle as President of Park College
 - Horace B. Davis
- UNESCO, Pacific Regional Conference
 - Bernard F. Haley
- UNESCO, Paris Meeting
 - Gottfried Haberler
- Inauguration of Joseph Hillis Miller as President of University of Florida
 - Harwood B. Dolbeare
- American Association for the Advancement of Science, Centennial Celebration
 - Morris A. Copeland
- Inauguration of President of Clarkson College
 - Theo Surányi-Unger
- Fiftieth Anniversary of Northeastern University
 - Seymour E. Harris
- Seventy-fifth Anniversary of Ohio State University
 - Albert B. Wolfe
- Inauguration of President of University of New Hampshire
 - Ruth J. Woodruff
- Inauguration of Dwight D. Eisenhower as President of Columbia University
 - Joseph H. Willits
- Inauguration of Fred D. Fagg, Jr., as President of the University of Southern California
 - Reid L. McClung

Inauguration of James Byron McCormick as President of University of Arizona

Grace S. M. Zorbaugh

Inauguration of Wilbur Wallace White as President of University of Toledo

John D. Nichols

Mailing List. The use of the mailing list was granted to the following:

Harvard University Press

To inform members about Earl J. Hamilton's book, *War and Prices in Spain, 1651-1800*

Harper and Brothers

To inform members about Chandler's *Economics of Money and Banking* and Mund's *Open Markets*

University of Chicago Press

Promotional campaign for the *Journal of Political Economy*

Business Executive Publications

To inform members about subscriptions for *Report for the Business Executive*

Columbia University

To inform members of Russian Institute and School of International Affairs

National Bureau of Economic Research

To send Annual Report containing essay, "The Cumulation of Economic Knowledge," by Arthur F. Burns; also questionnaire asking which out-of-print titles members would like to see reprinted if, as, and when the Bureau is in a position to do so

United States Department of Commerce

Promotional campaign for publications of the Department

M. W. Drexler Book Company

To send list of advanced standard works in economics, international law, and history

Committee for Constitutional Government

To send circular describing *The Keys to Prosperity*, by Willford I. King

The Blakiston Company

To send circular about *A Survey of Contemporary Economics*

Public Affairs Press

To send pamphlet, *Current Soviet Thought*—A New Series of Russian Translation Program of A.C.L.S.

It is with regret that the names of the following persons have been removed from our active membership list, notice of their deaths having been received during the year:

Walter S. Adams
Louis Bader
Bernardo Cevallos
Fred E. Clark
Fay W. Clower
Hartley W. Cross

Bert C. Fuller
Charles W. Gerstenberg
Charles O. Hardy
Merlin H. Hunter
Thomas W. Lamont
James D. Magee

Harry A. Millis	Homer N. Sweet
James M. Mitchell	Kinley J. Tener
Wesley C. Mitchell (Life Member)	Arthur P. L. Turner, Jr.
Gustav Stolper	William N. Watson

Respectfully submitted,
JAMES WASHINGTON BELL, *Secretary*

EXHIBIT I
PUBLICATION COSTS

Year*	PROCEEDINGS		Cost	HANDBOOKS		Cost
	Number of Pages	Number of Copies		Number of Pages	Number of Copies	
1930	222	4,300	\$1,353.91			
1931	308	4,300	1,919.18	88	4,200	\$ 589.54
1932	316	4,200	1,819.75			
1933	216	4,000	1,284.85	88	3,900	522.71
1934	232	3,700	1,192.91			
1935	248	4,000	1,347.88			
1936	360	4,200	2,037.90	58	4,100	454.36
1937	344	4,300	1,922.03			
1938	200	4,500	1,234.10	112	4,500	1,118.84†
1939	288	4,600	1,785.91			
1940	444	4,900	2,658.12	108	5,000	822.58
1941	479	5,200	3,294.45			
1942	548	5,400	3,909.79	208	5,500	1,775.72†
1943	535	5,500	3,652.56			
1944	470	5,800	3,350.40			
	144	5,900	1,215.22‡			
1945	536	6,400	4,502.84			
1946	960	6,700	8,149.90	143	6,900	2,035.71
1947	781	7,700	8,140.79			
1948	591	8,500	8,701.41	345	7,700	6,922.02

* This is the year of publication and pertains to the meeting of the preceding year. The figures are published in the subsequent year.

† "Who's who" volumes.

‡ Part of papers presented at annual meeting published as supplement to June number.

EXHIBIT II
MEMBERS AND SUBSCRIBERS

Class of Membership	Total 12/6/47	Added	Removed	Gain or Loss	Total 11/30/48
Annual	4,854	764*	325†	439	5,293
Junior	323	374‡	249§	125	448
Family	85	16	10	6	91
Complimentary	24	3	1	2	26¶
Life	29		2	2	27
Honorary	14	3		3	17
	5,329	1,160	587	573	5,902
Subscribers	2,198	733	483	250	2,448
Complimentary	2	12	1	11	13
Totals	7,529	1,905	1,071	834	8,363

* Includes 55 junior members changed to annual.

† Resigned 54; nonpayment 167; died 18; lack of address 42; changed to junior 44.

‡ Includes 44 annual members changed to junior.

§ Includes 55 junior members changed to annual.

¶ Includes 8 complimentary members who do not receive the publications of the Association.

REPORT OF THE TREASURER FOR THE YEAR ENDING NOVEMBER 30, 1948

Operating Results. The following summary shows the chief sources of income and expenditures for the fiscal years ending December 6, 1947, and November 30, 1948:

	December 6, 1947	November 30, 1948	Increase or Decrease
<i>Income</i>			
Membership dues	\$25,366	\$28,003	\$ 2,637
Subscriptions	\$10,543	\$11,831	\$ 1,287
Sales	1,399	1,417	19
Advertising	3,654	6,829	3,175
Directory income (net)	—	161	161
Republications income	—	1,000	1,000
Publications Income	\$15,596	\$21,238	\$ 5,642
Interest	\$ 1,227	\$ 1,195	\$ 32
Dividends	2,910	2,944	34
Less Custodian fees	116	128	12
Sale of securities (net)	1,056	1,887	831
Investments (less fees)	\$ 5,077	\$ 5,898	\$ 821
Total income	<u>\$46,039</u>	<u>\$55,139</u>	<u>\$ 9,100</u>
<i>Expenses</i>			
Office salaries	\$ 8,239	\$10,167	\$ 1,928
Annual meeting	1,400	1,434	34
Executive Committee	1,094	1,124	30
Other committees	129	1,148	1,019
Other expenses	3,178	3,237	59
Administrative and operating	\$14,040	\$17,110	\$ 3,070
Review printing	\$15,798	\$19,046	\$ 3,248
Papers and Proceedings	8,141	8,701	560
Directory	—	7,300	7,300
Editorial office (Review)			
Contributors	1,761	1,775	14
Editorial and clerical salaries	6,391	6,444	53
Other	698	566	132
Publications	\$32,789	\$43,834	\$11,044
Total expenses	<u>\$46,829</u>	<u>\$60,943</u>	<u>\$14,114</u>
Net operating loss	<u>\$ 790</u>	<u>\$ 5,804</u>	<u>\$ 5,014</u>
<i>Additional Appropriations</i>			
Committee on Survey of Economics	\$ 2,700	—	
Committee on Public Issues	1,000	\$ 500	
Committee on Foreign Aid	—	100	
	<u>\$ 4,400</u>	<u>\$ 6,404</u>	<u>\$ 1,914</u>

Committee Appropriations. Over the past few years the Executive Committee has made appropriations to implement the work of several committees. Some of these appropriations were made on a contingent basis and were never utilized; others were used in whole or in part. Appropriations and balances are analyzed in the table following:

<i>Committee</i>	Amount Previously Appropriated	Balance Unexpended Dec. 6, 1947	Appropriated or Expended During Period	Balance Unexpended Nov. 30, 1948
Survey of Economics	\$ 7,700	\$ 2,877	\$ 3,065*	
Research	1,500	725	64	\$ 661
Teaching	2,000	1,200	200	1,000
Public Issues	1,000	1,000	500	
			476	1,024
Foreign Aid			100	
Contributions from members ..			1,187	1,207
			80	
	<u>\$12,200</u>	<u>\$ 5,802</u>	<u>\$ 2,099</u>	<u>\$ 3,892</u>

* Account overdrawn \$188.

Financial Condition. Comparative balance sheet figures are given below for December 6, 1947, and November 30, 1948.

	December 6, 1947	November 30, 1948	Increase or Decrease
<i>Assets</i>			
Cash on deposit and on hand	\$ 10,436	\$ 7,279	\$ 3,157
Receivables, net	1,952	3,136	1,184
Prepaid expenses	564	286	278
Furniture and fixtures, net	488	398	90
Investments at cost—			
Bonds	37,964	33,109	4,855
Stocks	48,756	48,624	132
	<u>\$100,161</u>	<u>\$ 92,833</u>	<u>\$ 7,328</u>
<i>Liabilities</i>			
Accounts payable	\$ 9,219	\$ 13,705	\$ 4,486
Allied Social Science Associations	829	829	—
Deferred income	14,819	11,415	3,404
Membership extension fund	1,308	1,213	95
Fund for proposed secretariat	35	35	—
Appropriations (not expended)	5,803	3,892	1,911
Life memberships	3,625	3,525	100
Surplus—			
Balance at beginning of period	68,888	64,523	4,365
Net loss for period	4,490	6,404	1,914
Transfers from life memberships	125	100	25
	<u>\$100,161</u>	<u>\$ 92,833</u>	<u>\$ 7,328</u>

Total income for the fiscal year ending November 30, 1948, was \$54,139, expenses totaled \$60,943, leaving an operating deficit of \$5,804 (which is \$5,014 more than the deficit of \$790 for 1947). We spent \$14,114 more this year than last, whereas income increased only \$5,642. Including the \$600

additional appropriations made during the year, the bookkeeping loss amounts to \$6,404, compared with \$4,490 last year.

Salaries and wages, committee expenses—all costs continue to go up—but the items that chiefly account for the big deficit, despite higher income, are printing and paper costs. For example, consider this year's *Directory*. The 1942 *Directory* cost \$1,775 (5,500 copies, 208 pages). We are printing 7,700 copies of the 1948 *Directory*, which will be nearly twice as large but will cost three to three-and-a-half times as much. Although this single item is large enough to account for this year's deficit, it cannot be considered as a nonrecurring item. The conclusion is that we are in the red and that this year's deficit promises to be more than a temporary one unless we either (a) curtail expenditures or (b) increase revenue.

Last year we called attention to the nonprofit-making character of our Association and to the "break even" financial policy we have tried to follow. Until recent years we have operated conservatively and have lived within our current income. Only once since 1919-20 (namely in 1942) did a deficit occur, until 1945. With a substantial financial backlog to draw upon, we have felt secure and have been willing to run temporary deficits "for undertakings that seemed particularly worth while." Now these temporary deficits threaten to persist because costs have caught up with income.

There are some ways of increasing income slightly. Last year we doubled our advertising rates and the revenue from that source has increased almost proportionately. This year we are charging a registration fee at the annual meeting and we are running ads in the program for the first time in order to help defray the expenses of the meetings. We cannot look forward to increased returns on our investment account nor can we long live on our accumulated surplus.

The extent to which the investment account has served as a financial backlog is illustrated by this year's experience. We have received an income of \$4,011 from interest and dividends and a profit of \$1,887 on sale of securities. These sales provided money for operating expenses but have reduced our portfolio by \$4,987 at cost price. In other words, the total "take" from the investment account amounts to \$10,884.

The best way to look at the resources which we have to fall back upon when current revenue fails to cover current expenditures is to follow the figure for Unappropriated Surplus in the Balance Sheet. A chart showing this figure, as well as net annual income or loss from 1910 to 1945, is shown on page 473 of the May, 1945, *Papers and Proceedings*. The figure reached a high of \$69,013 in December, 1946, dropped to \$64,623 last year, and has been further drawn down during the current fiscal year to \$58,219.

Facing the prospects of deficit financing, I sent to the members of the Executive Committee, on December 8, 1948, a "Proposal to Increase A.E.A. Dues," from which the following excerpts are taken:

Last year I had hoped that we might be able to ride the tide of inflation with our \$5.00 dues. This does not now seem to be possible. . . . Our dues have remained at the \$5.00 level since 1913. Since that time we have experienced two major inflations. Only our growth in members and subscribers has enabled us to keep unit costs down, but now marginal costs are approaching marginal revenues. Without counting in extraordinary costs, our operating deficit for the current year amounts to several thousand dollars.

INVESTMENT PORTFOLIO

Year	At Par	Cost			Market
	Bonds	Bonds	Stocks	Total	Stocks and Bonds
1925	\$25,000	\$24,661.75		\$24,661.75	
1926	27,000	28,623.25		26,623.25	
1927	29,000	26,688.45		28,688.45	
1928	29,000	28,633.45		28,633.45	
1929	31,000	30,569.48		30,569.48	
1930	31,000	32,439.48		32,439.48	\$32,635.40
1931	39,500	39,134.48		39,134.48	32,307.44
1932	40,500	41,134.48		41,134.48	33,239.70
1933	33,500	32,962.48	\$ 3,954.23	36,916.71	31,522.50
1934	31,500	30,989.48	3,954.23	34,943.71	34,714.00
1935	16,000	15,280.48	28,114.50	43,394.98	50,338.72
1936	17,000	16,260.13	33,712.57	49,972.70	62,991.00
1937	20,000	19,160.91	37,399.20	56,560.11	52,064.75
1938	22,000	20,180.95	38,302.20	58,483.15	58,598.88
1939	22,000	20,039.57	41,155.95	61,195.52	61,529.38
1940	25,000	22,519.80	41,155.95	63,675.75	60,553.88
1941	25,000	22,439.81	51,155.95	63,595.76	58,606.11
1942	27,000	24,651.12	41,556.06	66,207.18	58,211.88
1943	28,000	23,822.54	40,071.31	63,893.85	66,012.12
1944	30,000	25,731.51	46,033.81	71,765.32	81,844.01
1945	40,000	36,705.95	44,955.81	81,661.76	103,574.76
1946	40,000	37,964.08	47,422.89	85,386.97	93,682.61
1947	40,000	37,964.08	48,755.67	86,719.75	95,398.25
1948	35,000	33,108.63	48,624.14	81,732.77	84,841.91

RETURN ON INVESTMENTS

Year	Bonds	Stocks	Total	Rate of Return on Cost
1925	\$1,350.00		\$1,350.00*	
1926	1,410.00		1,410.00*	
1927	1,524.70		1,524.70†	
1928	1,642.77		1,642.77†	
1929	1,575.44		1,575.44†	
1930	1,695.21		1,695.21	5.22%
1931	1,886.81		1,886.81	4.82
1932	2,014.36		2,014.36	4.89
1933	1,679.49	\$ 108.57	1,789.06	4.84
1934	1,593.13	218.07	1,811.20	5.18
1935	1,022.96	680.70	1,703.66	3.92
1936	801.77	1,597.63	2,399.40	5.00
1937	884.87	2,689.62	3,574.49	6.31
1938	928.04	2,063.02	2,991.06	5.11
1939	978.79	1,781.52	2,760.31	4.51
1940	1,037.56	2,182.46	3,220.02	5.06
1941	1,088.97	2,497.35	3,586.32	5.64
1942	1,306.49	2,186.17	3,492.66	5.28
1943	1,133.97	2,094.47	3,228.44	4.90
1944	992.67	2,410.57	3,403.24	4.60
1945	1,479.99	2,488.85	3,968.84	4.71
1946	1,213.65	2,441.13	3,654.78	4.30
1947	1,227.31	2,909.85	4,137.16	4.77
1948	1,194.85	2,944.31	4,139.16	5.06

* Estimated income for year.

† Certificate of deposit interest included.

My proposal . . . is to increase active members dues and subscription rates from \$5.00 to \$6.00 or \$7.00 (some, who believe that the demand is inelastic and have aversion to the thought of a second increase later on, may suggest \$8.00 or even \$10.00, junior members \$3.00 to \$4.00, and to decrease life membership rates from \$200 to \$100. New rates would have to apply for the first time to the year 1950, since they could not be made effective for 1949. Bills for next year have already gone out.

It is now known that the Executive Committee recommended, and the business meeting approved, an increase in active members dues and subscriptions from \$5.00 to \$6.00 (other rates remaining the same, except that life memberships were decreased from \$200 to \$100). The increase is modest. On the basis of consumer price changes since 1913, present dues might reasonably be \$12.85. Six-dollar dues should still permit American Economic Association members to keep their memberships in allied associations with specialized interests. Also, it is hoped that continued growth in our membership will permit us to maintain and even expand our activities.

Respectfully submitted,

JAMES WASHINGTON BELL, *Treasurer*

REPORT OF THE FINANCE COMMITTEE

The following summary compares the status of our investment holdings this year and last.

INVESTMENT ACCOUNT				
		Cost of Holdings		Market Value
		12/31/47	12/7/48	12/31/47 12/7/48
Bonds	\$37,964	\$33,109	\$36,190 \$31,083
Stocks	48,756	48,624	59,208 53,759
		<u>\$86,720</u>	<u>\$81,733</u>	<u>\$95,398</u> <u>\$84,842</u>

During the year the following sales and purchases were made.

Sales	Cost	Sale (net)	Profit or Loss
\$2,000 Grand Trunk Western Railway Company, 4%....	\$1,855.45	\$2,024.00	\$ 168.55
\$3,000 U. S. Treasury, 2%	3,000.00	3,030.00	30.00
50 Shares J. C. Penney Company (common)	740.25	2,428.25	1,688.00
2 Rights Gulf Oil Corporation	3.28	3.82	.54
	<u>\$5,598.98</u>	<u>\$7,486.07</u>	<u>\$1,887.09</u>

Purchases	Cost
12 Shares Gulf Oil Corporation (common)	\$ 612.00

From the above it will be noted that about \$5,000, at cost figures, was taken from the fund, though at market prices the take was \$1,887 more. Our portfolio has thus been reduced in size by greater sales than purchases and also by shrinkage in market value.

Respectfully submitted,

ROY C. OSGOOD, *Chairman*
CHARLES C. WELLS
JAMES WASHINGTON BELL

BONDS

Amount	Issue	Cost	Value Market or Last Sale 12/7/48
\$3,000	Chicago and Northwestern Ry. 4½% 2nd Mtge. Bonds due 1999	\$ 2,431.50	\$ 1,807.50
3,000	Illinois Central Ry. St. Louis Div. 3%-1951	2,212.50	3,000.00
3,000	New York Central Ry. 4½% Ref. and Imp., Series "A," due 2013	2,437.50	2,017.50
5,000	New York, New Haven and Hartford Ry. Co. 1st and Ref. Mtge. Series "A" 4%, due 2007	4,755.00	3,275.00
1,000	Pennsylvania Ry. Co., 4¼% Gen. Mtge., Series "D," due 1981	986.50	990.00
1,000	Pere Marquette Ry. Co., 3¾% 1st Mtge. due 1980	1,000.00	930.00
1,000	Reading Co., 3¾% 1st and Ref., Series "D," due 1995	1,010.00	860.00
3,000	U. S. Defense Bonds, Series "G," 2½%, 1954	3,000.00	3,067.80
8,000	U. S. Treasury Bonds, 2½%, 6-15-72/67	8,000.00	8,072.00
7,000	U. S. Treasury Bonds, 2½%, 12-15-72/67	7,275.63	7,063.00
		<u>\$33,108.63</u>	<u>\$31,082.80</u>

Stocks

Number of Shares of Common Stock		Cost	Value Market or Last Sale 12/7/48
25	Chesapeake and Ohio Ry. Co.	\$ 1,309.07	\$ 815.62
55	Commonwealth Edison Co.	1,525.51	1,381.87
50	General American Transportation Corp.	3,084.30	2,275.00
100	General Electric Co.	2,738.19	3,675.00
50	General Motors Corp.	2,057.47	2,881.25
116	Glidden Company	1,635.72	2,378.00
62	Gulf Oil Corp.	3,714.97	4,262.50
100	Houston Lighting and Power Co.	3,202.03	4,550.00
100	Kroger Company	3,703.47	4,187.50
25	Liggett and Myers Tobacco Co.	2,018.13	2,184.37
50	Link-Belt Co.	2,524.15	3,150.00
50	Monsanto Chemical Co.	3,120.74	2,275.00
10	National Dairy Products Corp.	310.85	271.25
25	J. C. Penney Co.	370.13	1,171.75
50	Procter and Gamble Co.	2,459.72	3,231.25
80	Standard Oil Co. of Indiana	3,329.47	3,250.00
75	Union Carbide and Carbon Corp.	1,433.94	3,056.25
100	Wayne Pump Company	3,114.65	1,375.00
Number of Shares of Preferred Stock			
25	Crane Company 3¾% Cum. Pfd.	2,550.00	2,362.50
14	Glidden Co.	735.00	700.00
25	International Harvester Co.	3,686.63	4,125.00
		<hr/>	<hr/>
		\$48,624.14	\$53,759.11

REPORT OF THE AUDITOR

December 18, 1948

*Executive Committee,
American Economic Association,
Evanston, Illinois.*

DEAR SIRs:

In accordance with instructions we have examined the accounts and related records of the American Economic Association for the period December 7, 1947, to November 30, 1948, and now submit our report thereon together with the following exhibits:

Balance Sheet—November 30, 1948 Exhibit 1

Statement of Income and Expenses for the Period
December 7, 1947, to November 30, 1948 Exhibit 2

Results from Operations

Net loss for the period December 7, 1947, to November 30, 1948, was \$6,404 compared with a net loss for the period ended December 6, 1947 of \$4,490 as shown in the following summary:

Particulars	Dec. 8, 1946 to Dec. 6, 1947	Dec. 7, 1947 to Nov. 30, 1948	Increase Decrease
Income—			
Dues	\$25,366	\$28,003	\$ 2,637
Interest and dividends	4,021	4,011	10
Profit on sales of securities	1,056	1,887	831
Republication income	—	1,000	1,000
Total income	<u>\$30,443</u>	<u>\$34,901</u>	<u>\$ 4,458</u>
Expenses—			
Administrative and other operating expenses ...	\$14,040	\$17,110	\$ 3,070
Publication expenses	32,789	43,833	11,044
Publication income	<u>15,596</u>	<u>20,238</u>	<u>4,642</u>
Total expenses	<u>\$31,233</u>	<u>\$40,705</u>	<u>\$ 9,472</u>
Net operating loss	\$ 790	\$ 5,804	\$ 5,014
Appropriations for special committees	3,700	600	3,100
Net loss	<u>\$ 4,490</u>	<u>\$ 6,404</u>	<u>\$ 1,914</u>

The increase in dues reflects the increase in membership during the period under review, as reported by the Secretary:

Classification	Dec. 6, 1947	Nov. 30, 1948
Regular	4,854	5,293
Junior	323	448
Family	85	91
Life	29	27
Honorary	14	17
Complimentary	24	26
Totals	<u>5,329</u>	<u>5,902</u>

Interest on bonds owned was accounted for in accordance with stated rates; dividends received on stocks were compared with amounts reported in published records of dividends paid. Stocks and bonds costing \$5,599 were sold for \$7,486.

Net publication expense, as shown in the following summary, amounted to \$23,595 for the current period compared with \$17,193 for the preceding period:

Particulars	Dec. 8, 1946 to Dec. 6, 1947	Dec. 7, 1947 to Nov. 30, 1948	Budgetary Estimates for Calendar Year 1948
Expenses—			
Printing of:			
<i>Review</i>	\$15,798	\$19,046	\$17,600
<i>Proceedings</i>	8,141	8,701	—
<i>Directory</i>	—	7,300	—
Editor's honorarium	2,489	2,459	2,500
Payments to contributors	1,761	1,775	1,650
Editorial clerical salaries	3,902	3,985	4,000
Editorial supplies and expenses	641	567	450
Sundry publication expenses	57	1	—
Total expenses	<u>\$32,789</u>	<u>\$43,834</u>	
Less—Income:			
Subscriptions, other than members	\$10,543	\$11,831	
Sales of copies	1,399	1,417	
Advertising	3,654	6,830	
<i>Directory</i> income	—	161	
Total income	<u>\$15,596</u>	<u>\$20,239</u>	
Net publication expense	<u>\$17,193</u>	<u>\$23,595</u>	

The December, 1948, issue of the *Review* had not been printed at the time of our examination. The publishers of the *Review* have estimated the expense of printing 9,100 copies at \$4,950 and this figure is included in the costs above.

Changes during the period ended November 30, 1948, in Committee Funds Appropriated (not expended) are analyzed below:

Fund	Unexpended Balance Dec. 6, 1947	Appropriation or Expense During Period	Unexpended Balance Nov. 30, 1948	Overexpended Balance (Exhibit 2)
Committee on Contemporary Development, Economic Thinking and Information	\$2,877.01	\$3,065.63	\$ —	\$188.62
Committee on Research	725.78	64.20	661.58	—
Committee on Undergraduate Teaching of Economics and Training of Economists	1,200.00	200.00	1,000.00	—
Committee on Public Issues	1,000.00	500.00	1,023.76	—
		476.24		
Committee on Aid to Foreign Scholars	—	100.00		
		1,187.59	1,206.88	—
		80.62		
	<u>\$5,802.79</u>	<u>\$2,099.19</u>	<u>\$3,892.22</u>	<u>\$188.62</u>

Contributions to the Committee on Aid to Foreign Scholars received from members during the period amounted to \$1,187.50.

Financial Condition

Condensed balance sheets of the Association at December 6, 1947, and November 30, 1948, are compared below:

Assets	Dec. 6, 1947	Nov. 30, 1948	Increase Decrease
Cash on deposit and on hand	\$ 10,436	\$ 7,279	\$3,157
Receivables, net	1,952	3,136	1,184
Inventory of <i>Economic Essays</i> at nominal value	1	1	—
Prepaid expenses	564	286	278
Furniture and fixtures, net	488	398	90
Investments at cost			
Bonds	37,964	33,109	4,855
Stocks	48,756	48,624	132
	<u>\$100,161</u>	<u>\$92,833</u>	<u>\$7,328</u>
Liabilities			
Accounts payable	\$ 9,219	\$13,705	\$4,486
Allied Social Science Associations	829	829	—
Deferred income	14,819	11,415	3,404
Membership extension fund	1,308	1,213	95
Fund for proposed secretariat	35	35	—
Committee funds appropriated (not expended)	5,803	3,892	1,911
Life memberships	3,625	3,525	100
Surplus—			
Balance at beginning of period	68,888	64,523	4,365
Net loss for period	4,490	6,404	1,914
Transfers from life memberships	125	100	25
	<u>\$100,161</u>	<u>\$92,833</u>	<u>\$7,328</u>

Cash on deposit was satisfactorily reconciled with balances confirmed directly to us by the depositories.

The receivables of the Association were not confirmed by correspondence with debtors. Based upon the Association's past experience, the reserve for doubtful accounts appears to be adequate to cover normal losses.

Changes in the investment accounts were vouched by the examination of broker's invoices and other supporting data. Securities held were confirmed directly to us by the State Bank and Trust Company of Evanston, Illinois, custodian for the Association.

Insofar as we were able to ascertain, all liabilities of the Association at November 30, 1948, are reflected in the accompanying balance sheet and the Secretary has represented to us that to the best of his knowledge all liabilities are disclosed.

We wish to take this opportunity to express our appreciation of the courtesies and co-operation extended to our representatives during the course of the examination.

Very truly yours,

DAVID HIMMELBLAU & Co.
Certified Public Accountants

EXHIBIT 1

AMERICAN ECONOMIC ASSOCIATION
BALANCE SHEET—NOVEMBER 30, 1948*Assets*

CURRENT ASSETS:

Cash on deposit and on hand—

State Bank and Trust Company, Evanston	\$ 5,419.58	
National Bank of Commerce of Chicago	1,834.56	
Petty cash	25.00	\$ 7,279.14

Receivables—

Review advertising	\$ 2,198.50	
Interest accrued on bonds	448.33	
Publication sales	195.44	
Membership dues	493.75	
Sundry	66.50	

Total receivables	\$ 3,402.52	
Less—Reserve for doubtful accounts	266.42	3,136.10

Inventory of <i>Economic Essays</i> —at nominal value		1.00
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Total current assets		\$10,416.24
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PREPAID EXPENSES:

Unexpired insurance	\$ 99.36	
Inventory of stamps and envelopes	186.35	285.71

INVESTMENTS AT COST:

Bonds	\$33,108.63	
Stocks	48,624.14	81,732.77

FURNITURE AND FIXTURES (less reserve for depreciation)		397.95
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Total assets		<u>\$92,832.67</u>
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Liabilities, Funds and Surplus

CURRENT LIABILITIES:

Accounts payable	\$13,527.04	
Accrued salaries	177.49	
Allied Social Science Associations	829.44	\$14,533.97

DEFERRED INCOME:

Prepaid subscriptions	\$ 5,178.17	
Prepaid dues	6,236.25	11,414.42

MEMBERSHIP EXTENSION FUND		1,213.21
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FUND FOR PROPOSED PERMANENT SECRETARIAT		35.00
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COMMITTEE FUNDS APPROPRIATED (not expended)		3,892.22
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LIFE MEMBERSHIPS AND SURPLUS:

Life memberships	\$ 3,525.00	
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Unappropriated surplus—

Balance December 6, 1947	\$64,522.77	
Life memberships transfers	100.00	

\$64,622.77

Net loss for period December 7, 1947 to November 30, 1948 (Exhibit 2)	6,403.92	58,218.85	61,743.85
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Total liabilities, funds and surplus		<u>\$92,832.67</u>	
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AMERICAN ECONOMIC ASSOCIATION
STATEMENT OF INCOME AND EXPENSES
FOR THE PERIOD DECEMBER 7, 1947 TO NOVEMBER 30, 1948

	Particulars	Amount
INCOME		
Dues—		
Regular, junior, and family members	\$27,612.62	
Subscribing and contributing members	390.00	\$28,002.62
Investments—		
Interest and dividends:		
Interest on bonds	\$1,194.85	
Dividends	2,944.31	
	<u>\$ 4,139.16</u>	
Less—Custodian fees	127.80	\$ 4,011.36
Gain on sales of stocks and bonds	1,887.09	5,898.45
Republication income		<u>1,000.00</u>
Total income		<u>\$34,901.07</u>
EXPENSES:		
Administrative and other operating expenses—		
Secretary's salary	\$ 2,458.33	
Office salaries	7,709.63	
Annual meeting (net)	1,433.69	
Executive Committee expenses	1,124.02	
Other committee expenses	1,147.88	
Walker and Clark medals	615.59	
Postage expense	642.73	
Stationery and supplies	660.67	
Insurance	180.33	
President's expense	470.50	
Provision for depreciation	90.05	
Telephone and telegraph	68.35	
American Council of Learned Societies—		
dues and expense	204.31	
Exchange on checks	73.28	
Miscellaneous (net)	230.50	\$17,109.86
Publication expenses—		
Printing of:		
Review	\$19,045.86	
Proceedings	8,701.41	
Directory	7,300.00	
Editor's honorarium	2,458.53	
Payments to contributors	1,774.75	
Editorial clerical salaries	3,985.33	
Editorial supplies and expense	566.53	
Sundry publishing expense	1.12	
Total publishing expenses	<u>\$43,833.53</u>	
Less—Publication income:		
Subscriptions, other than members	\$11,830.95	
Sales of copies	1,417.10	
Advertising	6,829.65	
Directory income (net)	160.70	20,238.40
		<u>23,595.13</u>
Total expenses		<u>40,704.99</u>
Net operating loss		<u>\$ 5,803.92</u>
ADDITIONAL APPROPRIATIONS:		
Committee on Public Issues	\$ 500.00	
Committee on Aid to Foreign Scholars	100.00	600.00
Net loss (Exhibit 1)		<u><u>\$ 6,403.92</u></u>

REPORT OF THE MANAGING EDITOR FOR THE YEAR ENDING DECEMBER, 1948

At those intervals when one must pause to appraise the *Review*, primary interest is in the quality of the scientific contributions received and published. My general impression is that, over the postwar years, the quality of the contents of the *Review* has been maintained on a relatively high-average level, respectable but not distinguished. In this respect the 1948 volume does not differ noticeably from the year or two preceding. What is notably lacking, with a very few exceptions, is contributions of a high order of intellectual distinction. It is not difficult to find the reasons, in other preoccupations, why many persons capable of adding such distinction are absent from the pages of the *Review*. But it is a matter for disappointment.

There is, on the other hand, a particular source of pleasure for an editor year after year in receiving manuscripts of a desirable quality from theretofore unknown contributors. The *Review* is, I think, the principal agent in introducing such "finds" to American economics. And much of the published material of the best quality is from these younger contributors.

In analyzing each volume, I attempt to discover whether the contents display an undue proportion of space devoted to one group of topics or another. At times there has been criticism, and I myself have felt, that there was too much on "policy" and too little on fundamental analytical work. I do not think this is true of the 1948 volume which had a strong weighting toward analytical articles, or "theoretical" in the best sense. There was a fairly heavy weighting on the side of articles about the economies of other countries. This has been deliberate, since after the war it seemed especially desirable to follow the problems of postwar reconstruction.

In very large degree the distribution of topics among various fields is accidental in that it arises out of taking the best manuscripts received. The contributions of high standard are sufficiently scarce that there is little room for choice for the deliberate purpose of balancing the contents. There is, however, always some positive editorial effort to turn up good manuscripts on especially timely topics or on neglected fields.

The number of manuscripts received during the year was slightly larger than in 1947. In all, 205 manuscripts were received, of which 110 were of a length and character appropriate to leading articles and 95 to communications. The total number of articles and communications published during the year was 47, or 23 per cent of the manuscripts received. As usual, most of the manuscripts received and published have been unsolicited although a few of special timeliness or importance arose as a result of editorial correspondence and suggestion. A statistical summary of the contents of the *Review* in 1948 with corresponding figures for 1947 is presented below, omitting the advertising pages and exclusive of the *Proceedings*.

	1948		1947	
	No.	Pages	No.	Pages
Leading articles	26	460	24	430
Communications	22	96	33	151
Book reviews	114	290	134	294
Memorials	—	—	4	14
Classified list of new books	—	60	—	48
Classified list of periodical articles	—	34	—	29
Classified list of dissertations	—	27	—	21
Notes	—	53	—	61
		1,020		1,048

For the year, the total number of pages was 28 less than in 1947 and just 20 pages more than the estimated 1,000 upon which publication estimates were based. Articles, communications, and book reviews were contributed by 149 persons as compared with 163 in 1947.

While space devoted to leading articles increased by 30 pages, communications were 55 pages less in number. This was not done as a matter of policy but merely happened as a matter of chance in choosing the manuscripts which were most worthy of publication. In the past, the choice between placing manuscripts as articles or communications has been rather arbitrary, depending mainly on length. It has been decided to change this practice and hereafter practically all contributions of substantial importance will be placed with the articles, though minor items may be printed in reduced type. The communications section will contain only items more appropriately covered by that designation. The dividing line will necessarily remain somewhat indistinct.

I have been giving thought to the possibility of saving some of the considerable space devoted to the bibliographical lists and notes. During the year, they took up 174 pages. Space might be saved by omitting the list of new members and transferring the personnel notes to an annual supplement to the *Directory*. The book lists could be shortened by omitting many entries which are ephemeral and of minor importance. There is a question whether the list of periodical articles is worth publishing at all. The *Guide to Periodical Literature* is readily available to most readers and the current contents of the leading economic journals are published by the *Economic Journal*, also commonly available. I solicit the views of the Executive Committee and of the readers of the *Review* on these points.

Expenditures in 1948 exceeded those in 1947 by just over \$3,000, mainly due to the increase in costs under the new printing contract. The actual cost exceeded the budget estimate by \$1,220. Of this excess, \$600 was due to the printing of a larger number of copies than was used in the estimate, \$200 to paper costs above the normal contract price and a similar amount to a slight excess in the number of pages printed, above the estimate. The remainder of the excess was due to an underestimate of \$125 on payments to contributors and small underestimates in connection with other items.

The following table presents the actual expenditures in 1948 in comparison with the estimated budget and with actual expenditures in 1947.

	Budget 1948	Actual 1948	Actual 1947
Printing and mailing	\$17,600.00	\$18,575.70*	\$15,629.14
Editorial	2,500.00	2,500.00	2,500.00
Editorial assistance	4,000.00	4,078.35	3,982.21
Supplies	450.00	491.73	510.92
Contributors	1,650.00	1,774.75	1,760.75
	<u>\$26,200.00</u>	<u>\$27,420.53</u>	<u>\$24,383.02</u>

* Cost of December number estimated.

The number of copies printed rose from 8,200 copies in December, 1947, to 9,100 copies in December, 1948. The estimated costs for the coming year presented below are based upon the latter number. Since the number of copies has been steadily rising, the estimated cost is a minimum which will be exceeded to the extent that the printings continue to increase. The number of copies printed and the cost of printing are shown by quarters in the following table.

	Copies Printed	Net Pages	Gross Pages	Cost*
March	8,500	243	278	\$4,484.06
June	8,700	249	288	4,441.30
September	8,900	282	320	5,103.34
December	9,100	246	300	4,547.00†

* After deducting cost of reprints sold.

† Estimated.

The proposed budget for 1949 is based upon an annual volume of 1,000 pages net of advertising and upon present costs and present size of printings. This budget is just over \$1,000 above the actual cost for 1948. The increase is almost entirely accounted for by the proposal which I have submitted to the Executive Committee for an increase of \$1,000 in the salary of the assistant to the managing editor.

The recommended budget for 1949 is presented below.

Printing (paper, postage, reprints, etc.)	\$18,600.00
Editor's salary	2,500.00
Editorial assistance	5,100.00
Supplies	500.00
Contributors	1,750.00
	<u>\$28,450.00</u>

In the report of a year ago, the desire was expressed to take whatever steps were necessary to make the *Review* more widely available to foreign economists and institutions. This end has been notably served by the action of the Social Science Research Council in taking out subscriptions for some 80 European universities. In addition, I have used the discretion given me by the Executive Committee to provide free subscriptions to a number of European departments of economics, seminars, and research organizations, and similar action is pending for several others. The exchange list has also been somewhat increased. At the present time, in all, the *Review* is providing 13 complimentary copies to foreign scholars and has a foreign exchange list of 98.

I wish to bring before the Executive Committee once more the suggestion for improvement in the format of the *Review*. I very much hope that the finances of the Association will be in such shape as to justify approval of this improvement. Depending upon the degree of departure from the present format, the annual cost of improvements is estimated at from \$700 to \$1,500.

The terms of Professor B. U. Ratchford and Professor L. H. Seltzer as members of the Board of Editors expire at the end of 1948 and it will be necessary for the Committee to select their successors. The members of the Board whose terms continue are Professors R. A. Gordon, Arthur Smithies, G. J. Stigler and F. H. Harbison. All of the members of the Board have given faithful and effective service during the course of the year. Their services are invaluable for maintaining the high quality of the contents of the *Review*.

My appreciation must be expressed to the George Washington University for its courtesy in providing an office for the *Review* in its Hall of Government.

Respectfully submitted,

PAUL T. HOMAN, *Managing Editor*

REPORT OF THE GENERAL COMMITTEE ON REPUBLICATIONS

The first three volumes of reprinted articles published by the Blakiston Company under contract with the Association continue to find a good market. During the first nine months of 1948, sales of Volume I, *Readings in the Social Control of Industry*, were 1,936 copies; Volume II, *Readings in Business Cycle Theory*, 1,272 copies; and Volume III, *Readings in the Theory of Income Distribution*, 1,217 copies. Since their respective dates of publication (July, 1942, January, 1944, and August, 1946), the three volumes have now had sales of 3,719, 5,439, and 4,997 copies, respectively.

Although according to the terms of the contract with the publishers, no final settlement is to be made until all copies of a given volume have been sold, the publishers have again this year offered to advance to the Association one thousand dollars against future earnings.

Volume IV, *Readings in the Theory of International Trade*, edited by Howard S. Ellis and Lloyd A. Metzler, has been completed, and is scheduled for publication in March, 1949.

The General Committee on Republications has proceeded with plans for further volumes. Upon the basis of the very high interest evidenced by those replying to the committee's questionnaire in the subjects of public finance and monetary theory, it has been decided that these should be the subjects for two of the next three volumes. Roy Blough and Arthur Smithies have accepted responsibility for making the final selection of articles and for editing a volume on public finance and fiscal policy; and Friedrich A. Lutz and Lloyd W. Mints have assumed the same responsibility for a volume on monetary theory. The third new volume now being planned is to be on the subject of price theory, and G. J. Stigler and K. E. Boulding have consented to serve as co-chairmen of the selection committee for this volume.

It will be recalled that a volume in the general field of industrial relations and labor economics received a high rating in the replies to the committee's questionnaire. A volume of reprinted articles in this field, however, which has since been published under other auspices apparently meets the more urgent needs in this field. Accordingly the committee has for the present decided not to undertake a volume of reprinted articles in labor economics.

A volume of reprinted articles on *The Scope and Method of Economic History* is to be jointly sponsored by the American Economic Association and the Economic History Association, and its preparation will be in the hands of a selection committee whose chairman is Arthur H. Cole.

Members of the General Committee on Republications would welcome suggestions as to further volumes that would be useful.

Respectfully submitted,

BERNARD F. HALEY, *Chairman*
JAMES WASHINGTON BELL
FRIEDRICH A. LUTZ

REPORT OF THE COMMITTEE ON PUBLIC ISSUES

The Committee on Public Issues held a meeting on Wednesday morning, December 29. This is the first meeting which the committee has held since it met in Chicago on December 30, 1947. The committee, in the meantime, has been carrying on its business by correspondence.

The two subcommittees appointed by the Committee on Public Issues in 1947—namely, the Subcommittee on the Problem of Economic Stability and the Subcommittee on the Problem of International Commercial Policy—have been at work but neither has completed its report.

Professor Wallace, Chairman of the Committee on the Problem of Economic Stability, became ill in the fall of 1948 and Professor A. G. Hart, of Columbia, has become Acting Chairman of the committee. This committee met in November to discuss its current draft. The committee expects that it will need at least two more meetings and one redraft in order to have a presentable final report.

The Committee on the Problem of Economic Stability requests authorization of travel expenditures on the same scale in 1949 as in 1948.

Professor McCracken, Chairman of the Committee on International Commercial Policy, reports that the committee has a preliminary draft of its report which will be considered at a meeting of the committee in Cleveland at the time of the Annual Meeting of the Association. He expresses the view, however, that considerable revision of the present draft is needed.

The Committee on Public Issues was given funds at the meeting of the Executive Committee in April, 1948, to establish a third subcommittee. Such a committee has not yet been established because the Committee on Public Issues has believed that it would be desirable to have a report from one of the existing subcommittees before establishing a third one. The Committee on Public Issues has in mind two or more fields in which additional subcommittees might be established.

The Committee on Public Issues recommends that the request of the Committee on the Problem of Economic Stability for travel funds in 1949 on the same scale as in 1948 be granted. This can be done by reassigning the \$500 authorized by the Executive Committee for the use of a third subcommittee. The Committee on the Problem of Economic Stability is an able group keenly interested in its job. The Committee on Public Issues believes that the Association would obtain a good return from additional funds spent on the Committee on the Problem of Economic Stability.

If this reassignment of funds is authorized, the Committee on Public Issues recommends that the Executive Committee appropriate an additional \$500 to be spent on a third subcommittee if and when such a subcommittee is established.

The Committee on Public Issues has given special consideration to the direction of the Executive Committee that it consider the possibility of polling economists on economic issues of public interest.

The committee has not yet taken a poll. It has explored possible questions

in the hope of finding some significant ones which would be appropriate for a poll, but it has not yet found any. It is possible that within the next year an issue on which a poll of economists would be useful will develop. If that happens, the committee will consider the desirability of a poll.

The committee has been impressed with two difficulties involved in polls. One is the difficulty of formulating issues so that short answers such as "Yes" and "No" properly represent the opinions of the respondent. It is possible that this difficulty can be overcome by breaking the general question down into a number of subsidiary questions. Another problem is avoiding bias in returns. A mail poll seems certain to involve bias of some kind or other. Consequently, the avoidance of bias seems to require that the poll be taken by individual interviews. This is an expensive matter.

The committee has explored the possibility of obtaining expert assistance in the event that it undertakes a poll. Mr. Rensis Likert, Director of the Survey Research Center at the University of Michigan, was asked whether his organization would be in a position to help the committee. Mr. Likert expressed interest in the possibility of a poll among economists and stated that his organization would "be glad to assist in phrasing questions and to work out plans for polling." He added that "within moderate limits we can do this without compensation." He stated that if the committee desired his organization to do actual interviewing or similar work, he would have to ask the Association to reimburse his organization for such service.

Respectfully submitted on behalf of the committee,

SUMNER H. SLICHTER, *Chairman*

REPORT OF THE COMMITTEE ON THE UNDERGRADUATE TEACHING OF ECONOMICS AND THE TRAINING OF ECONOMISTS

During 1948 the work of this committee has proceeded somewhat unevenly. Several of the subcommittees engaged in exploring particular aspects of our problem have reported substantial progress; others have not moved much beyond what was reported to the Executive Committee at its April, 1948, meeting. Each subcommittee that has not already submitted a report has been asked whether it can do so by June, 1949. It is our hope that we may have our work in such condition by that time that we may be able next summer to submit our several reports to selected members of our Panel of Consultants for their critical scrutiny and recommendations. If this schedule can be carried out we will have a manuscript ready for publication next fall.

Following some correspondence and preliminary conversation in New York the chairman of this committee went to Washington November 11 and 12 for consultation with Dr. J. Laurence Phalan, Specialist for Economics in the Higher Education Department of the U.S. Office of Education. As a result of this, it was tentatively arranged that Dr. Phalan would join this committee and become its secretary. Dr. Phalan has recently joined the staff of the Office of Education and has been laying out a plan of work to be carried on by and for that office in connection with the teaching of economics in colleges and universities. In working out his plans, Dr. Phalan discovered that the first interests of the Office of Education were in exploratory work very similar to that already designed and started by our committee. In view of this virtual identity of interest, Dr. Phalan stated that he would be able to devote a substantial part of his time, as well as the appropriate resources of the Office of Education, to this committee's work.

The arrangement made tentatively in Washington was approved by other members of this committee and by President Schumpeter. Dr. Phalan is, therefore, officially a member of the committee and has already assumed his duties. This committee has been handicapped from the start by the fact that all of its members, including the members of its ramifying subcommittees, are busy people with little continuous time to devote to our work. The addition of Dr. Phalan to our group will, we are confident, fill a long-felt need. He already has started to work on the projects of two of our subcommittees which to this time have worked under the most severe handicaps. These two projects will be described at a later point in this report.

While in Washington the chairman of this committee attended a meeting of the Committee on the Teaching of Political Science of the American Political Science Association. At this meeting useful working agreements were reached concerning collaboration of the two associations at points where their interests overlapped. The Specialist for Political Science of the Office of Education is a member of the A.P.S.A. committee, and he and Dr. Phalan will be able to work in close association with each other.

General statements concerning the present status of work of our several subcommittees follow:

1. *Elementary Courses in Economics.*

During the past year Professor William W. Hewett succeeded Professor E. E. Hale as chairman of this subcommittee. This group has on hand more than one hundred completed questionnaires. We believe that this subcommittee will prepare a useful report within the next few months.

2. *Interdepartmental Introductory Courses in the Social Sciences.*

Professor Louis M. Hacker, chairman of this subcommittee was compelled by his departure for Oxford University to resign his chairmanship, and a successor has not been found. Dr. Phalan has taken over the large number of completed questionnaires and other materials Professor Hacker had on hand and is planning to complete this work in as close collaboration as possible with the A.P.S.A. committee. If it proves to be desirable, a joint report on this subject may be prepared by the two committees. Dr. Phalan will be advised by the standing subcommittee with regard to this work.

3. *The Undergraduate Economics Curriculum and Related Areas of Study.*

Professor Mabel Newcomer, chairman of this group, submitted a revised report on this subject about a year ago. Copies of the report now are in the hands of selected members of our Panel of Consultants for their criticisms and suggestions.

4. *The Training of Teachers of Economics.*

This has been one of our most active subcommittees and it has on hand a large amount of material from which its report will be derived. This material comes, in part, from two extended Conferences on the Teaching of Economics, conducted by Professor Arnold Tolles, chairman of the subcommittee. We are confident that this group will be able to submit a useful report within a few months.

5. *The Study of Economics in Schools of Business.*

Early this year Dean Howard R. Bowen assumed the chairmanship of this group and a great deal of work has been accomplished under his planning and direction. Each member of this subcommittee has prepared a section of a report to be discussed and completed at a conference of the subcommittee during the meeting in Cleveland. A completed report from this group will be forthcoming soon.

6. *Undergraduate Economics in Preparation for Careers in Public Service and in Business Administration.*

This also has been an extremely active subcommittee. The results derived from a questionnaire submitted to several hundred business executives were shown to the Executive Committee at its meeting in Chicago last year. Opinions of economists engaged in government service also have been explored. This subcommittee has excellent material on which to base its report.

7. *Treatment of Especially Able Students of Economics.*

Professor Amy Hewes, chairman, submitted a report for this group in the late summer of 1946. Copies of the report are in the hands of selected members of our Panel of Consultants for their criticisms and suggestions.

8. *Economics Teaching in the Schools.*

This has been perhaps the most difficult subcommittee assignment among all those made by our committee. We now have, through our arrangements with Dr. Phalan and the Office of Education and through our liaison with the A.P.S.A. and the National Council for the Social Studies, a basis on which, we believe, we can do a useful piece of work in this field. A memorandum indicating the general outline planned for such a study is attached to this report. (See exhibit.)

9. *The Study of Economics in Relation to Education in Agriculture.*

This group has secured a considerable amount of material through questionnaires and by other means. We are confident the subcommittee now has the basis for a report.

10. *The Study of Economics in Relation to Education in the Professions.*

This subcommittee has prepared statements covering two of the four divisions of its report. These deal with the study of economics in relation to legal education and in relation to medical education. The other two sections of the report are in the hands of members of the subcommittee for completion.

11. *The Use of Visual and Other Devices in Teaching Economics.*

This was the last of our subcommittees to be formed and it has been quite active during the past year. It has submitted questionnaires to departments of economics in ninety-eight colleges and to sixty individuals and research organizations having special experience with methods of visual presentation. Professor K. William Kapp, chairman of this group, also has assembled a considerable amount of other materials. It is expected that a report from this subcommittee will be forthcoming within the next few months.

HORACE TAYLOR, *Chairman*

EXHIBIT

PLAN FOR A STUDY OF ECONOMICS TEACHING IN THE SCHOOLS

At a meeting in Washington on November 12, 1948, attended by Dr. Phalan and other members of the Higher Education Division of the U.S. Office of Education, by Dr. Merill Hartshorn, secretary of the National Council for the Social Studies, and by Horace Taylor, chairman of this committee, the following plan for a study of economics teaching in the schools, with a view to aiding in the direction of such study, was arrived at:

1. That selected consultants of this committee be asked to write out what they regard as the most important problem areas in economics which might

appropriately be studied by students in secondary schools and that these lists of areas be assembled by Dr. Phalan, Secretary of the Committee.

2. That the lists of problem areas be digested by Dr. Phalan's office and with the collaboration of Dr. Hartshorn; that the resulting master list be broken down into its component areas of study; that each of these areas of study be submitted to one or more selected experts who will be asked to prepare outlines of their respective areas showing what would, in their judgment, be the most appropriate ways of studying each area in secondary schools; that these outlines be returned to Dr. Phalan.

3. That an over-all summary of these outlines be prepared and sent to selected persons (100 or more) in secondary schools with a request that each school report on the extent to which it is, or is not, giving attention to these areas of study along the lines indicated by the outline; that the replies to these inquiries be sent to Dr. Phalan's office.

It is planned that the outlines of problem areas and the returns from selected secondary schools will form the basis of a report to the committee on this subject. It also is planned that both the outline and the returns from the selected secondary schools form the basis of suggestions to teachers in secondary schools for developing their courses in social studies, problems of democracy, etc. It is expected that the experts who are consulted on each of the several problem areas will make suggestions as to the pros and cons of controversies of these areas and will suggest a working bibliography of the literature pertaining to these areas and their problems. If the results of this work seem sufficiently promising, it is possible that an attempt will be made to implement the study of these various problem areas through the preparation of textbooks. This last, however, is an activity that the committee would seek to further rather than something that the committee would be prepared actually to do.

It is understood that the program will be carried forward with the utmost possible collaboration with the Committee on Education of the American Political Science Association and with Dr. Hartshorn's office. If it is found that the work planned by our committee and by the committee of the A.P.S.A. can be turned into a joint enterprise we believe that both groups may profit from close collaboration in this study.

HORACE TAYLOR, *Chairman*

REPORT OF THE COMMITTEE ON AID TO FOREIGN SCHOLARS

The Committee on Aid to Foreign Scholars appointed at the December, 1947, meeting of the A.E.A. consists of: Frank D. Graham, Calvin B. Hoover, Horace Taylor, Herbert von Beckerath, and Mabel Newcomer, Chairman.

In response to the request for aid sent out in the spring of 1948, the committee has received \$1,206.88 in cash (as of December 9) and approximately 2,200 books and periodicals.

Committees have been organized in Belgium, France, Germany, Great Britain, and the Netherlands to arrange for distribution of materials. It is expected that similar committees will be organized in Austria and Italy. As a result of correspondence with these committees, shipments of books and periodicals have been made to Belgium and Germany. Similar shipments are in process to France and Great Britain. The materials are sorted in Poughkeepsie and then sent to the Smithsonian Institution for shipment abroad.

The chairman of the committee has been in touch with other organizations sending books abroad to make sure that there is no duplication of effort. But the need appears to far exceed the resources of all the organizations and none is covering the field covered by the work of this organization.

The committee has operated this far entirely by correspondence. A meeting is planned on December 28 in Cleveland at which decisions will be made concerning the expenditure of funds, none of which has been used to date. It has been tentatively agreed, by correspondence, that the entire sum should be spent for books. Professor Taylor has investigated the possibility of buying remainders at reduced rates and there seem to be good opportunities in this field. Purchases will presumably be limited to books specifically requested and outstanding publications of the past decade. There have been requests for equipment but the size of the fund makes it doubtful if this would be a wise use of money. As a by-product of the committee's work, names of economists have been supplied to individuals who wish to send CARE packages and clothing.

Of the \$100.00 appropriated for expenses of the Committee, \$79.15 has been spent thus far for clerical expenditure, postage, and express.

Respectfully submitted,

MABEL NEWCOMER, *Chairman*

REPORT OF OUR REPRESENTATIVE ON THE AMERICAN COUNCIL OF LEARNED SOCIETIES

During 1948 the energies of the Council have again had to be devoted in large part to its own organization. Along with getting into operation under the new bylaws, it was necessary to find a new Executive Director, as Mr. Krusé felt impelled to return to teaching after a year of service. A special nominating committee, after an extensive survey, recommended Professor Charles E. Odegaard, of the University of Illinois, and he was elected by the Board of Directors and took over in the summer. At the same time, Chairman of the Council, Dean William C. Devane, of Yale, was forced by health considerations to retire after a short incumbency. Fortunately, in the interest of continuity, Professor Krusé was willing to take the office of Chairman and has been nominated without opposition and will undoubtedly be elected at the annual meeting of the Council next month. The forthcoming meeting will be the first at which, as provided in the new bylaws, each constituent society will be represented by a single delegate instead of two, as in the past; and members-at-large will also be present, along with ex officio members (nondelegate members of the Board of Directors).

During the year, unusual emphasis has been placed on international cultural relations and organization in this field. The Council participated actively in the first postwar meeting of the UAI (International Union of Academies). And it was active in connection with new international organizations in philosophy and in other humanistic fields. It also set up a "Panel" or nonpermanent committee on international cultural relations (of which the American Economic Association delegate is a member), expected to work in close connection with UNESCO. The Panel is a new feature of Council organization, authorized at the annual meeting in January, 1948. It is being tried out also in two other fields—the publication of scholarly works in small editions and personnel or manpower in the humanities.

The regular activities of the Council have been carried on through the administrative staff in Washington and various standing committees—notably grants in aid of research and of publications and planning of research in various fields. These will be reported in detail at the forthcoming 1949 annual meeting. Soon thereafter will appear the Proceedings Number of the A.C.L.S. *Bulletin* in which is published an account of the meetings and activities of the Council and its committees. The Proceedings Number of the *Bulletin* also includes the report of the Conference of Secretaries of the constituent societies of the A.C.L.S., which holds its meeting concurrently with that of the Council. Our Secretary, James W. Bell, is President of the Conference of Secretaries. The Council is preparing to publish a *News Letter*, appearing several times a year and aimed at a more popular level than are its other publications. The first issue of this publication is scheduled to appear in April.

Respectfully submitted,

FRANK H. KNIGHT

REPORT OF THE REPRESENTATIVE ON THE SOCIAL SCIENCE RESEARCH COUNCIL

In 1948 two meetings of the Board of Directors of the Social Science Research Council were held, the first of which was concerned with the installation of the new director, Mr. Pendleton Herring, and the second, in September, to a consideration of the policies which he presented to the Council. Comments on these meetings must necessarily be of a vague character since the director has always exercised a powerful influence on its activities. One must be content with congratulating the Social Science Research Council and the constituent bodies on the appointment of Mr. Herring. It is unnecessary to outline in detail the work of the various committees of the Council since they are available in *Items*; in annual reports, and in special reports.

The experience of the writer on the Council has been limited and perhaps this may be the occasion for a comment on its advantages and limitations as an instrument for the advancement of research in the social sciences. I can best do this by quoting an extract from a letter to Professor J. A. Schumpeter, President of the American Economic Association:

I have been perhaps unduly impressed with the complicated character of the Council organization but I have come to feel that the complexity operates to the disadvantage of constituent associations. I suspect that it involves reliance on members at large who come to dominate the more important posts and, consequently, leave those representing constituent associations with a slight sense of frustration. I suspect also that the complicated structure tends to favor types of research which may be called co-operative and which involve heavy administrative costs and tend to weaken the position of the individual scholar who is reluctant to put forward claims for research, though it should be said that the Council has initiated a special study of this problem under the direction of Mr. Elbridge Sibley. Again, it reflects as it probably should, the interest of privately endowed institutions in supplementing income to the disadvantage of scholars in state institutions. I have an impression that this involves an emphasis on what might be called here and now, crucial, urgent, hot problems which are not in the best interests of sustained research. All this has its repercussions in the tendency of the constituent association to neglect appointments of efficient representatives and tends to lead to a cluttering up of the Council with ineffective personnel.

In other words, my limited acquaintance leads me to feel that the Association should take a more active interest in the activities of the Council and should concern itself with the possibilities of offsetting deficiencies incidental to its constitutional structure.

Respectfully submitted,

HAROLD A. INNIS

REPORT OF OUR REPRESENTATIVE ON THE BOARD OF DIRECTORS OF THE NATIONAL BUREAU OF ECONOMIC RESEARCH

The past year saw the death of Wesley Clair Mitchell who did more than any other single individual to make the National Bureau of Economic Research what it is today. In its scope and quality the work of the National Bureau in 1948 was a fitting tribute to Wesley Mitchell and the colleagues whom he helped to develop.

During the year the operations of the Bureau were substantially expanded. Several new studies were undertaken. In the spring Mr. Herbert Hoover, Chairman of the Commission on the Organization of the Executive Branch of the Government, requested the National Bureau to survey and appraise the organization and efficiency of the statistical agencies of the federal government and make recommendations. An intensive study was made with Frederick C. Mills as director and Clarence D. Long, collaborator. A summary of their report, entitled *The Statistical Agencies of the Federal Government*, has been published by the Hoover Commission. The full report will be published by the National Bureau in 1949. Preparation of this report has delayed until this year the inception of Mills's survey of changes in output, employment, and productivity of American industry over the last half century.

Work on the Bureau's new project in the field of international economic relations has been launched with a study of the relation between immigration and the labor force. In the coming year Solomon Fabricant will begin a study of the foreign trade of the United States with attention to secular, cyclical, and wartime changes. This is to be followed by a survey and systematic restatement of the data on our international balance of payments.

During the year the Business Cycle Unit began new studies of the cyclical behavior of the money supply and associated changes in American banking since the Civil War (by Milton Friedman), regional variations in business conditions in the United States (by Rutledge Vining), and an econometric study of variations in investment over time beginning with railroads (by Lawrence Klein). Other new studies are investigations of cyclical aspects of urban real-estate finance by Wolfgang Stolper, of income tax changes by Lawrence Seltzer, and of federal grants-in-aid by James Maxwell. The last-named study, one of the projects of the Conference on Research in Fiscal Policy, was undertaken with co-operation from the Council of Economic Advisers. A new part of Clarence Long's study of the labor force is an inquiry into the Russian labor force in relation to that of the United States and Great Britain.

During the year four books, three "Occasional Papers," and one Technical Paper were published. Several other studies were finished or nearly completed. Morris Copeland's exploratory study of money flows was ended during 1948. The Federal Reserve System will maintain current estimates of money flows and claims balances. Harold Barger completed a manuscript presenting measures of output, employment, and productivity in commercial transportation by

land, water, and air for several particular years, 1889-1946. A study of international financial transactions by Oskar Morgenstern is nearly completed. Geoffrey Moore's manuscript on harvest cycles is completed. An essay by George Stigler on employment and compensation in education, including college education, is nearly finished. A book on manufacturers' inventories and business cycles by Moses Abramovitz is being reviewed for publication. A study of *Taxable and Business Income* has been completed by Dan T. Smith and J. Keith Butters.

Studies in progress include income distribution, family expenditures for services, resources utilized by government, wholesale and retail distribution and margins, cyclical behavior of labor income, costs and profits of industrial enterprises, cyclical behavior of monetary and banking phenomena since the Civil War, consumption and business cycles, statistical indicators, cyclical change patterns in wholesale prices, the structure of wages, union membership, the labor force under changing income and employment, tax treatment of capital gain and losses, the federal budget in the first postwar decade, and extensive studies in the fields of urban mortgage credit, agricultural credit, and corporate bond experience.

To implement plans made a year earlier the Universities-National Bureau Committee selected two topics for special conferences: economic growth and research in business cycles. Exploratory papers on the former were presented at a meeting in New York, November 26 and 27, 1948. These papers will be circulated for wider comment. Further work in this field is to be encouraged and the Committee contemplates another meeting on the subject in three or four years. The Universities-National Bureau Committee plans a special conference on research in business cycles in the fall of 1949 to be attended by members of university faculties teaching courses in business cycles as well as scholars engaged in this field.

During the year *Business Finance and Banking*, by Neil H. Jacoby and Raymond J. Saulnier, was reprinted. In an effort to gauge the demand for out-of-print books, the members of the American Economic Association were circularized by the Bureau to indicate which volumes they would like to see reprinted. About two hundred and fifty replies were received by the Bureau.

The National Bureau assisted in the program of the recently organized International Association for Research in Income and Wealth by serving as its fiscal agent and by contributing the part-time services of one of its staff, Daniel Creamer, to act as a research secretary. Under the chairmanship of Simon Kuznets the International Association has begun to issue the *International Bibliography on Income and Wealth*. Three annotated quarterly reports appeared in 1948. The Association plans to meet in Cambridge, England, August 24-September 2, 1949, to discuss a series of technical papers.

At the time of his death Wesley Mitchell had almost finished a draft of the first of two volumes constituting a progress report on "What Happens During Business Cycles." It is believed that with some additional work by the staff the first volume, treating varieties of cyclical behavior and their consensus, can be made ready for publication in 1949.

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Supplement.—Fifty-first Annual Meeting:

Papers and Proceedings. Problem of Industrial Growth in a Mature Economy; Effects of Current and Prospective Technological Developments upon Capital Formation; Public Investment in the United States; Expansion and Contraction in the American Economy; Effect of Industrial and Technological Developments upon Demand for Capital; Role of Public Investment and Consumer Capital Formation; Income and Capital Formation; Price and Production Policies of Large-Scale Enterprise; Changing Distribution Channels; Financial Control of Large-Scale Enterprise; Pure Theory of Production; Changing Character of American Industrial Relations; Wages and Hours in Relation to Innovations and Capital Formation; Effect of Wage Increase upon Employment; Relation of Wage Policies and Price Policies; An Appraisal of Factors Which Stopped Short the Recovery Development in the United States; Fiscal Policy in the Business Cycle; An Appraisal of the Workability of Compensatory Devices; Divergencies in the Development of Recovery in Various Countries; Factors Making for Change in Character of Business Cycle; Industrial Relations. Pp. 280.

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- **Supplement No. 3.—Directory. Pp. 198. 3.00

Volume XXXIII, 1943

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- Papers and Proceedings, Political Science, Political Economy, and Values; Educational Function of Economists and Political Scientists; Public Administration of Transportation under War Conditions; How Achieve Full and Stable Employment; Incentive Problems in Regulated Capitalism; Postwar Labor Problems; Social Security; Postwar Legal and Economic Position of American Women; Postwar Domestic Monetary Problems; Economic Organization of Welfare; International Trade; Regional Problems; International Monetary Problems. Pp. 440 + 16. 1.25
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- Papers and Proceedings, Consumption Economics; Expanding Civilian Production and Employment After the War; Natural Resources and International Policy; Interdepartmental Courses in the Social Sciences; Price Control and Rationing in the War-Peace Transition; Organized Labor and the Public Interest; Aviation in the Postwar World; International Monetary and Credit Arrangements; Agricultural Price Supports and Their Consequences; Political Economy of International Cartels; Fiscal Problems of Transition and Peace; Problems of Regionalism in the United States; Food and Agriculture—Outlook and Policy; Function of Government in the Postwar American Economy. Pp. 520 + 16. 1.25

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- Papers and Proceedings, Problem of "Full Employment"; American Economy in the Interwar Period; Postwar Labor Relations; Monetary Policy; Changing Structure of the American Economy; Economic Problems of Foreign Areas; Publication of an Annual Review of Economics; New Frontiers in Economic Thought; Postwar Shipping Policy; Monopoly and Competition; Postwar Tax Policy; Postwar Railroad Problems; International Investment; Recent Developments in Public Utility Regulation; International Cartels; Economic Research; Methods of Focusing Economic Opinion on Questions of Public Policy (e.g., Monetary, Agricultural Price

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 Supplement No. 2.—Handbook. Pp. 143. 2.00

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Papers and Proceedings. Employment Act of 1946 and a System of National Bookkeeping; Social and Economic Significance of Atomic Energy; Public Debt: History, Effects on Institutions and Income; Economic Forecasts, and Monetary Aspects; Role of Social Security in a Stable Prosperity; Economic Outlook; Economy of the U.S.S.R.; Domestic versus International Economic Equilibrium; Prices: Wartime Heritage and Some Present Problems; Banking Problems; Productivity in the American Economy; International Trade Organization; Vital Problems in Labor Economics; Transportation and Public Utilities Problems; Housing Problems; Economic Research; Changing Character of Money. Pp. 781. 1.50

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Volume XXXIX, 1949

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 Supplement (No. 1—January).—Directory. Pp. 343. 3.00

Supplement (No. 3—May).—Sixty-first Annual Meeting:

Papers and Proceedings. Commemoration of the Centenary of the Communist Manifesto—The Sociology and Economics of Class Conflict; Current Research in Business Cycles; Interregional Variations in Economic Fluctuations; Economic Research; Economic Consequences of Some Recent Antitrust Decisions; Theory and Measurement of Price Expectations; Input-Output Analysis and Its Use in Peace and War Economies; Liquidity and Uncertainty; Problems of the ITO; Commodity Marketing—Going Where; John Stuart Mill—Centennial Appraisal; Possibilities for a Realistic Theory of Entrepreneurship; Economics of Preparedness for War; Present Issues of the Latin-American Economy. Pp. 537. 1.50

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